

ANNOUNCER: Ladies and gentlemen, please welcome Professor Philip Corey, chair of the Compton Lecture Series Committee, the Honorable Dafros Kahockwa, Ambassador Kimonyo James, MIT President Susan Hockfield, and our very special guest His Excellency, Paul Kagame president of the Republic of Rwanda.

[APPLAUSE]

SUSAN HOCKFIELD: Good afternoon, and welcome to MIT's Kresge Auditorium. Let me offer some context for the Compton Lecture Series. The lecture series was established more than 50 years ago in 1957 to honor MIT's President Carl Taylor Compton who had died three years before the inauguration of the lecture series. Carl Taylor Compton guided MIT for almost a quarter of a century from 1930 until his death in 1954.

First, he served as president from 1930 to 1948. And then he served as chair of the Corporation, our Board of Trustees, from 1948 to 1954. As you all well know, those were tumultuous times in this country, times that included the Great Depression, a world war, and an economic and intellectual transformation.

Compton was a transformative figure in MIT's history. He was a constructive revolutionary with his passion for uniting the physical sciences and engineering, he transformed MIT. And he also transformed engineering education and practice everywhere. The Compton Series honors his wide-ranging intelligence and curiosity. They were begun to, and I quote, "bring to MIT some of the great minds on the world scene."

Since 1957, the Compton Lecture Series has brought us leading voices in science, technology, public affairs, education, and the arts-- from the great physicist Niel Bohr who gave the first Compton Lecture, to Senator Edward Kennedy who re-inaugurated the series just over a year ago. Our Compton lecturer this afternoon is the first, and we hope only the first of many, to come to us from the continent of Africa, President Paul Kagame of Rwanda.

Through his eight years in office, President Kagame has driven a wide-ranging effort to develop Rwanda's greatest natural resource, its people. His remarks today will explore the imperative of science and technology in accelerating African and Rwandan development. And I must say it would be hard to choose a topic that would have pleased Carl Taylor Compton more. President Compton believed passionately in MIT's mission to advance knowledge and educate students in service to the nation and the world.

Above all, he understood the revolutionary power of science and engineering to improve human existence. As President Compton wrote almost 70 years ago, "In recent times, modern science has developed to give mankind for the first time in the history of the human race a way of securing a more abundant life which does not simply consist in taking away from someone else." It is with much the same recognition that President Kagame is working to transform Rwanda from a poor country trapped in subsistence farming to a thriving, modern knowledge-based economy with trading partners around the world.

In the year 2000, Rwanda's transitional National Assembly unanimously elected him president. Three years later, he was sworn in as Rwanda's first democratically elected head of state. For the creativity and determination he has brought to the many challenges of development, President Kagame is often described as one of Africa's most promising young leaders.

For example, in terms of trade, Rwanda has long struggled with the challenge of being overshadowed and landlocked by much larger neighbors. So President Kagame has helped the country to turn itself into a regional hub for information technology. A largely rural country, Rwanda boasts magnificent biodiversity.

Under President Kagame, the nation has recognized the value and fragility of these resources and is finding constructive ways to use them sustainably, for instance, by alerting scholars to the research opportunities in the Rwandan environment and by cultivating some of the most highly prized coffee beans in the world.

I should mention that MIT students and faculty are involved in growing numbers of research projects focused on Rwanda as well. President Kagame has also pursued a systematic plan to reform and enhance Rwandan education, from making primary and much of secondary education free and universally available, to investing in Rwanda's premier institutions like the Kigali Institute of Science and Technology.

He has also built alliances with countries, companies, and universities around the world. And it is in that spirit that he comes to us today. As President Kagame has said, and I quote, "There are some who are scared by building a country on the basis of ideas." But as residents of another nation built on ideas and members of an institute that creates new ideas for a living, I know we are all eager to hear his plans.

Following his remarks, President Kagame has generously offered to answer questions. So I would offer to all of you to prepare those questions in advance. But please join me in welcoming to MIT our Compton lecturer, the President of Rwanda, His Excellency, Paul Kagame.

[APPLAUSE]

PAUL KAGAME: Thank you very much. Dr. Susan Hockfield, president of MIT, members of the MIT community, distinguished guests, ladies and gentlemen-- I am delighted to join you this afternoon. And if I may, let me first of all thank you President Hockfield for inviting me to give the Carl Taylor Compton Lecture.

In my contribution today, I wish to reflect on the imperative of fostering and utilizing science and technology to accelerate Africa's and Rwanda's socioeconomic transformation. I'm happy to say that the MIT community is already making valuable input. A case in point, and there are many cases, as the One Laptop Per Child initiative led by your very own Professor Nicholas Negroponte that is building partnerships to provide computers to children in developing countries including Rwanda.

As you all know, science and technology have always been the basis of prosperity and development. The United States optimizes this legacy. And no city in your country demonstrates this better than Boston which has transformed itself from a maritime trading port, to a manufacturing town, and finally, to the knowledge economy center that we see today.

In Africa, technology, and in particular, mobile phone technology, is making a tremendous and positive impact, enabling us to move in the same direction. However, the science part of the equation is not moving at the same pace and [INAUDIBLE]. The creation of the great commerce of scientists, engineers, and specialist required to lead the diffusion of science and technology remains largely unaccomplished.

I would argue this is the single most challenging task facing contemporary Africa. President, distinguished ladies and gentlemen, allow me to first place recent developments in Africa and Rwanda into perspective. Despite occasional setbacks, our continent has been steadily consolidating peace, stability, and democracy in sharp contrast to a decade ago.

This generally stable environment is permitting equally improved economic performance by most African economies which have been growing in the past five years or so by 6% annually and even higher for oil producers and other high performers. In other words, our continent is no longer all about violence, disease, and human or other disasters that scarred many African countries in recent decades.

We are now becoming a continent of opportunities. For example, the rise of large, homegrown enterprises, each valued at over a billion US dollars in annual turnover is perhaps something not widely known, even though such firms now feature in a half a dozen African countries. These are not government-owned commodity monopolies over the past, but private sector companies in banking, insurance, services, information technology, energy among others.

In the same vein, Africa is increasingly of more relevance to other parts of the world besides the traditional trading partners of Western Europe and North America. Significant foreign direct investment into Africa is coming from Asia, especially China, and India, as well as the Gulf states. These are some of the positive changes that now permit us to talk of accelerated socioeconomic transformation on our continent.

For Rwanda, in the aftermath of the 1994 genocide, the debate was not about development, but whether the country could ever constitute a viable state. But 14 years later, peace, stability, and resilience have enabled us to consolidate democratic and economic institutions, which have allowed the Rwandan economy to grow at an average of 70% annually in the past several years. Our vision of becoming a middle income country by the year 2020, an objective we firmly believe we will achieve, requires that we think and act innovatively, boldly and creatively. And this is where science and technology come in.

Colleagues and friends, ladies and gentleman, let me first address the technology part, and in particular, the leapfrogging power of mobile technology. Some of you may be aware of the interesting facts about the mobile telephone in Africa, including the following. To start with, our continent constitutes the first region where the mobile phone has significantly surpassed fixed line telephones. Second, which is now Africa is now the world's fastest growing mobile telephone market with over 281 million subscribers in the first quarter of 2008.

Third, the industry has produced several major African multinational companies, some of them operating beyond the continent. Fourth, these companies are making heavy investments on the continent. It is estimated that the mobile phone industry will invest up to \$50 billion US dollars on the continent over the next five years. In Rwanda, for example, half of the total foreign investment for 2008 has come from mobile and telecom firms.

Fifth, the mobile phone sector, which has become a critical player not only in spinning off small and medium retail businesses, but also in a spreading wealth via stock ownership in local market and capital markets. In addition, the mobile phone has played a leading role in narrowing the digital divide. Thanks to the internet infrastructure built by these mobile phone companies, the number of internet users in Africa is stated to be growing more than three times as fast as the rest of the world.

Finally, the mobile phone together with the internet, have transformed ways of doing business generally rendering other sectors more efficient and effective. Distinguished audience, the phenomenon of the mobile phone companies does not tell the full story. It is necessary to look briefly at their impact on various fields.

One such example is the story of micro-entrepreneurs in Rwanda, a case which, coincidentally, was published in the MIT journal *Information Technologies and International Development* last year. The study found that customers are now able to call in orders and that entrepreneurs can reach their suppliers easily and are able to stay in touch with their employees.

Most importantly, some of these businesses can respond to orders outside their neighborhood, sometimes nationally, something that was unthinkable before the mobile phone. The MIT study showed how the mobile phone had facilitated the upward social mobility of micro-entrepreneurs. One example was a baker in Kigali whose business grew by an estimated 30%, enabling his family to move into a larger and more comfortable home.

Similar accounts abound in other parts of Africa. Within the East African region, for example, the Kenya Agricultural Commodity Exchange has reduced barriers between farmers, traders, and consumers. Central to this commodity exchange service seeing over the 5 million subscribers are information kiosks located in rural markets that relay timely market information to computer services or other computer servers.

Users call or send text messages requesting information and in minutes, receive current commodity prices in different parts of Kenya, allowing them to compare [INAUDIBLE] beats. It is important that this agriculture exchange has improved the lives of farmers and their families by up to 25% in terms of income, health, and education.

Currently, there are other important uses of mobile telephones in Africa, including retrieving savings, transferring funds, making payments, or accessing student exam results. This illustrates the almost limitless ways this technologies can be used to sidestep our development challenges. The public sector in Africa is undergoing similar adjustments.

Allow me to share two examples from Rwanda. For years, our power utility company known as ElectroGaz was a money-losing entity kept afloat by government handouts. A major problem was that the company did not even know who its debtors were. ElectroGaz was at the mercy of its customers who chose whether or not to settle their accounts. And, of course, most did not settle their accounts. Resulting in default and liquidity problems.

The company has made a complete turn around and is now an award-winning utility having become Africa's most innovative power supplier in the year 2007, as a result of utilizing prepayment technologies. The utility no longer sells power directly to customers. This is now the business of over 80 small and medium enterprises nationwide.

These vendors purchase electricity wholesale from ElectroGaz and via the internet, mobile phone, or power cards sold to retail outlets located in neighborhood grocery stores. From a limping, subsidized utility that placed strain on the country's budget, ElectroGaz now ranks among the top 10 Rwandan corporate taxpayers.

A more widely known IT solution in our country is TRACnet, a public-private partnership venture involving an American IT company, Voxiva Inc, and the government of Rwanda with support from the United States government. This system allows decision makers in the health sector to analyze and respond to the care and treatment needs of AIDS patients in real time. Or antiretroviral therapy centers in Rwanda are linked to central servers that are fed with data via either their mobile phone or internet. Even the remotest areas of the country without electricity are linked to the system by solar-powered mobile phones.

The TRACnet has undoubtedly improved our national HIV/AIDS programs by enhancing the monitoring of patients and the management of drug stocks countrywide. Efforts are underway to expand the TRACnet platform to additional public health threats such as tuberculosis, malaria, and other infectious diseases. Members of faculty, staff, and students, distinguished ladies and gentlemen, what I have just related illustrates primarily how mobile phone technologies are enabling us to leapfrog some features of underdevelopment.

However, this is not enough. Making the decision or decisive socioeconomic breakthrough in Africa will require that science joins technology. The good news is that what needs to be done is generally known. No one would disagree, for example, that the creation of prosperity in Africa is constrained by how we trade with the rest of the world.

We continue to export and process primary commodities, which explains why our continent remains impoverished in spite of abundant natural resources. The inability to generate greater wealth from these resources is primarily a result of severely limited scientific and technological capacity to process and add value to products for global markets. This leads me to the second factor where measures already exist while the consensus already exists on what needs to be accomplished.

In order to acquire the required scientific and technological human resources capacity, we must invest heavily in all levels of education and especially in knowledge institutions. This is where the we in Africa and in Rwanda remain particularly vulnerable. We cannot develop if we do not nourish and retain scientific communities to drive strong, innovative, and relevant higher education institutions that will supply vital competencies.

Imagine the United States without its university system, public funding for research, the foundations, the linkages between industry and knowledge, as well as the innovations that are continuously produced through these relationships. Likewise, without a knowledge base, Africa's imperative for agricultural and industrial development to create wealth would remain and realized nor would we be able to develop or manage our water resources, energy, health, climate change and biodiversity to name but a few fundamentals.

If I may, let me take us back briefly to our utility company ElectroGaz, as described earlier, to emphasize this point. Mobile phone and internet technologies have enabled this utility to rapidly integrate more effective and efficient asset management systems. The more pressing task, however, is to acquire the scientific know how to generate more and cheaper energy to address our growing economic and development needs.

Dear friends, ladies and gentleman, we can learn a lot from the United States. The innovation, entrepreneurial energy, and the interplay between knowledge centers, business, and government that has become synonymous with MIT and Boston General is a model that we in Africa should emulate. It is clear that in order to accelerate our continent's socioeconomic transformation, we have urgently intensified efforts to build strong scientific capabilities and reinforce linkages to other institutions engaged in creating prosperity, including government and the private sector.

I invite you MIT community to be part of overcoming our challenges and in turning them into rewarding opportunities. I look forward to an even a better relationship between MIT, Rwanda, and Africa. I thank you for your kind attention.

[APPLAUSE]

SUSAN HOCKFIELD: President Kagame welcomes your questions. So please, we have microphones in the aisles if you would please step up to the microphone with your questions. Yes, please.

AUDIENCE: Hi, Mr. President, thanks for the talk. That was a nice speech. My name is Lamene of Harvard Medical School. I have a question and a comment both. As you mentioned in your speech, Africa has a wide spread of natural resources. But despite that, it is still the most impoverished society in the whole entire universe, making it the most underdeveloped society or undeveloped society in the whole entire world and guided by the principle that development starts from the grassroots level and from the bottom up.

I think in my opinion, the most formidable obstacles that Africa faces today at this present time is not technology, is not trade, but incompetent governance and illiteracy. And my question then to you is that what is the flagship organization of Africa, which is the AU, doing today in order to promote-- the incompetent governance that we have and the lack of literacy that we have in the society. What is AU doing? Are there any policies at all being implemented in order to improve that situation? And in relationship to the world, what is the world doing in order to help Africa to start changing things from the grassroots level and not from the top to bottom? Thank you.

PAUL KAGAME: Well, you raise a good question. I think it is a combination of factors that Africa remains impoverished. I want to agree with you that it is not just science and technology. But science and technology is one major component to be considered.

But where I want to agree with you is that certainly competent leadership and good governance to make sure that all of the prerequisites or the foundation is laid where now you can build other things, also bringing in the other important component of science and technology. Certainly, those are very important elements. Where there is good leadership and good governance, very clear efforts will be seen in a place to now harness those other elements that are also part of the process to find the solutions.

Now, about African Union and so on-- the African Union recognizes that point. That's why different initiatives had created NEPAD, New Partnership for Africa's Development. And they are in all different elements that are to be prioritized who are singled out. And it included particularly the point you are raising as well as these other elements that I was talking about, including science and technology.

But of course, being able to identify a problem is one thing. You need to move another tape. And that is implementation. How do you after I have identified a problem, after I have identified what needs to be done, then you must be seen to be doing exactly what needs to be done? And I think that's where you find a lot of problems. Again, it is related to, in many cases, the particular problem we are pointing a finger to of incompetence or governance structures, structures in place that are not able to make a delivery of what needs to be delivered.

So Africa keeps grappling with these issues. And we find different success stories in different parts of Africa. You also find places where things are not probably going as they should. So it's a work in progress, I should say. But I think what needs to be done is clear. And it's also partly what you were saying. What remains is for Africa and Africans to be seen doing what they know that should be done for us to develop.

AUDIENCE: If I am not wrong, Rwanda is the first country to have a majority of women as members of the parliament. Is this presence a reflection of the presence of women in other sectors such as industrial or educational? Or is it an effort to enroll more women in these sectors? Thank you.

PAUL KAGAME: It's an effort to have women at different level in different sectors play their rightful role as members of our society. We inherited a situation in Rwanda. I'm sure it's the case in many parts of the world, where women are not-- where women are really not fully involved in the social and economic development of countries, including our own.

But for us to be able to deal with that problem, we consider it as a priority that we should involve all members of our society to participate in our development equally as a matter of right, but also, simply, it is foolhardy to imagine that you would can leave out 52%, like in our case, of our population is women. Leaving them out, that doesn't make any sense-- political, economical, or otherwise. And we think it is also a right for women as well as it is for other members of our society, men, to fully build on their talents and potential and different capabilities and together. So it is a deliberate effort. And it is a deliberate effort to involve women in all spheres of our life.

SUSAN Over here, please.

HOCKFIELD:

AUDIENCE: Mr. President, I just want to say [NON-ENGLISH] My name is Lucy. I'm from the Harvard Kennedy School of Government. I had prepared two questions, but you answered one of them in your lecture. I must say, though, that I'm really, really excited to have you here speaking on behalf of Rwandans. And I am very much looking forward to continuing the model that you're setting for Africa youth in the Vision 2020.

I'm studying political and economic development. And I look forward to interfacing with you and several policy makers in the government. My question is how can we have as much access to policymakers? For instance, in my classes, I need to have case studies on several issues that are of interest to me. I want to highlight Rwanda issues. And if you could steer me and fellow classmates in the direction of people or departments that can help us by being specific. Thank you.

PAUL KAGAME: That is the simplest question so far, which we shall deal with, no problem. We will give you-- I think people who are here that will get in touch with you the different contact points through which you can access all of us.

SUSAN Over here, please.

HOCKFIELD:

AUDIENCE: Mr. President, would you discuss the interconnectedness of the US and Rwanda? And what are the mutual interests of young scientists and engineers in the US and the people of Rwanda? What do we lose if we ignore Rwanda? And what do we gain by concerning ourselves with Rwanda?

SUSAN Do you want me to rephrase the question?

HOCKFIELD:

PAUL KAGAME: Rwanda, as I said, Rwanda as a case study constitutes challenges as well as opportunities. In dealing with the challenges of Rwanda, you are actually in a way confronting global challenges as well because most of the challenges Rwanda faces are not all of them necessarily limited to Rwanda. They are challenges that you are likely to meet elsewhere.

So in a way, it also develops the person who has interested himself in Rwanda's challenges. It presents that person with an opportunity to be able to find solutions for the challenges that are presented here, but also by extension, globally. But in terms of opportunities where it is an area of investments or in realizing satisfaction in terms of being productive not only in a narrow sense, but also in a broad sense, I think that can also be achieved.

But the third, and finally, maybe if I can end on that, I think when you interest yourself in Rwanda's challenges and participate in the process of dealing with those challenges, you are impacting very positively on the life or lives of many people. And I think maybe to many, that is rewarding in a sense that you are helping people become better in addressing overcoming their different challenges.

AUDIENCE: Your Excellence, my name is Robyn. I'm a second-year MBA student at MIT Sloan. And I have a great passion for developmental entrepreneurship. So it has been said that the greatest asset of Rwanda is its people. And you highlighted that the importance of micro-entrepreneurship when you were talking about the development in the mobile phone sector. So my question is how do you stimulate the entrepreneurial growth in your country? And what are the main challenges that you're facing?

PAUL KAGAME: Well, stimulating that requires, first of all, with the micro-enterprises that you are able to communicate, you're able to reach many people, and interact with them and find what is in their possibilities that will enable them to indeed benefit from being entrepreneurs at their level.

Second, together it is important that you identify the challenges they meet in that process so that you together find a solution whether it is a provision of capital or if it is putting in place the different kinds of infrastructure on which they are able to build or to move forward and also infrastructure that is easily accessed by the people at their level. So it's an interplay of a lot of efforts and communication and education and also putting the necessary environment in place that will facilitate that to happen.

AUDIENCE: And what of the main challenge?

PAUL KAGAME: Well, the main challenge is that we are not able to put always, or in time, the necessary kind of infrastructure that is required. It takes time. Sometimes it requires heavy investments that we have to grapple with to obtain and therefore be able to put that infrastructure in place. And sometimes the necessary capital that you are talking about is not easily available to cover the bigger number of people you wish to cover.

So these are challenges. But as time goes on and as more efforts are crowded out, you find that things are taking place, things are happening, and the challenge becomes sustainability, to be able to sustain that, and to make it grow. But it's not insurmountable. It's something that takes time, but it can be done.

AUDIENCE: Thank you for taking time out from your responsibilities at home to be here today. I wanted to ask if you could discuss some of the approaches that you're taking to dealing with high fertility rate within Rwanda given the small size of the country?

PAUL KAGAME: That's one of the challenges we face. Rwanda, the size of Maryland or 26,338 square kilometers, has now a population of 10 million. Per square kilometer, we have about 350 inhabitants, per square kilometer. And the population growth rate is close to 3%. That's a very big challenge. In fact, even with the growth of our economy that I was talking about, on average 7% for the last 7 years is very negatively impacted by this level of growth rate of our population.

So what we do, and what we've been doing, is education. We chose to carry out efforts in terms of educating our people, mobilizing them, and showing how this is a very big challenge, how it is not sustainable. And from just a practical point of view, we show them that we affect every individual, every family, if we don't collectively do something about it. And through calculations and estimations, we found that if we could sensitize and mobilize our people at least to make sure because now a Rwandan family has an average of six children.

And we've been saying now why don't we reduce that at least to half, not saying you shouldn't have-- we don't want to bring it to zero yet. That would be considered to be another huge problem. So we want to be somewhere in the middle. And really, through explanations, through discussions, through debates, through demonstrations of how this is a problem, we are beginning to see that there is a very interesting response within the population. So that is the way we intend to continue.

SUSAN HOCKFIELD: Let me just say that we're going to continue with questions for about 15 more minutes. So I'm happy to have you stand by. But we may not get to all of the questions.

PAUL KAGAME: Maybe we shorten the questions, and we shorten the answers.

AUDIENCE: Good afternoon, Mr. President, Jonathan Hayes, a Sloan Fellow at the Sloan School of Management. As a fellow African, I am from Zimbabwe, the question I have relates to governance. Good leaders are few and far between-- in any country, hard to find. So the challenge for the future is how does one build an institution in a country if things are going very well? One cannot stay there forever. But if you are doing a good job, why do you need to leave? I think you know where I'm going. What are your thoughts?

PAUL KAGAME: My thoughts on that is while we are still allowed to serve and have a limited time to serve, all of us, even for those who want to stay there forever, they won't stay there forever, even if they want. So it's better to plan early and make sure that you leave in place things that will hold together after you. So in the case of Rwanda, what you try to do is to insist on building institutions, institutions that will outlive all of us leaders. So leaders will come one after another, and these institutions will go on for a long time.

Well, I imagine this is probably known by everybody, by other leaders. Maybe you will ask, but which would be a very difficult question for me to answer why in some parts it happens, and in others it doesn't happen. Again, it comes to the question of choice and having the sensitivity that countries people, institutions are far greater than individuals who there at one time, even if they are able to do good things.

So the whole aim for me, for other leaders in Rwanda, is to do what we can do and do it the best way we can, but involve building institutions that will outlive us. And then what will happen maybe in one country or in another, it may not happen in other countries. But it's up to people as they continue forward. It's a form of struggle that maybe readers would imagine in different places that we actually be able to the right things.

SUSAN Over here, please.

HOCKFIELD:

AUDIENCE: Mr. President, my question is a follow up to that. Oftentimes, progressive--

SUSAN Mic, please.

HOCKFIELD:

AUDIENCE: Sorry, oftentimes in progressive or enlightened leadership, they fail to put in place certain transitional frameworks. How could you specifically say that you are preparing for a post-Kagame era in Rwanda?

PAUL KAGAME: Yes, more or less the same question. You see, maybe that's why also you have to ask the same question. It's a bit complex in a way because while it is complex, you have people even doing what is right that they should be doing. You have constitutions in place, you have institutions there, and at some point, something happens that I cannot explain probably. Other people want to be able to explain.

But the same people who have been doing the right things and putting everything right in the right place turn around and bring down to the very things they have put in place. I can't be responsible for that. I don't know how to explain that. But it's thus far in Rwanda, what you are trying to do is to build institutions. First, we put in place a constitution that really had to take into account our past problems and make sure that it leads to building and strengthening institutions that will allow people to govern or to come in and be leaders and be able to leave, as institutions remain.

And up to this point, we think we are doing the right things. And we intend to continue until we see ourselves. So maybe for Rwanda, apart from seeing what is being done that probably may show that we are on the right path, we also have to wait and maybe I can't be surprised if there is anybody who is skeptical and say, well, let's wait and see. So let's wait and see.

AUDIENCE: I'm Sean Abiem. I'm a PhD candidate studying transformations in African political culture. I'm also the editor of *African Perspective*, which is a pan-African journal of strategy projection. I brought a copy for you. I hope somebody in your staff can receive it. Basically, talking of perspective, I was struck by the fact that I did not hear any close link between the development project that you outlined and the African Union.

And it seems to me that this is very important because almost any economist today believes that without a population of at least 100 million people, it's very difficult for a polity to support or to sustain international competition when it comes to business. So I am aware of the neighborhood problems that have occurred around Rwanda. But really, how can Rwanda or any other country hope to succeed to make these kind of links between science and technology without any mutualization that help African populations, African states, to build together instead of having development policies designed only nationally. So I am curious of how you intend to work with it.

PAUL KAGAME: I have an answer, a very short one for you. Rwanda doesn't, in what I was saying, doesn't just look at itself in isolation. It sees itself together with other nations. That's why, for example, we have an East African community that we belong to, bringing together Kenya, Tanzania, Uganda, and Burundi. This is five countries that have come together, and they constitute 120 million people.

And we are doing everything possible to make sure that we get closer and closer. In fact, to the point under discussion, there is even a political federation. So that is the way to go. And in our case, we are being practical about it. We want to join in with other countries and make sure that if, for example, East African community works, then you would probably see the emergence of other countries getting together in a similar form, or even better.

SUSAN Over here, please.

HOCKFIELD:

AUDIENCE: Thank you, Mr. President. My name is Mr. Zagorski. And you spoke at length about how much of a positive effect cell phones had on economic development, how it was almost an instant infrastructure. I was wondering if you'd considered if there were any other simple devices perhaps similar to the cell phone that could be introduced and produce similar results?

PAUL KAGAME: I am sure there would be other devices similar. I was just demonstrating in the case of a cell phone. So I am sure people in the area of technology will see similarities and how technology is used to solve different other problems which otherwise maybe people may need to be thinking about. So it's a question of thinking broadly and looking at other devices coming together to address problems of the examples I have given.

SUSAN Perhaps we can take one more. Please.

HOCKFIELD:

AUDIENCE: Well, I have another one. Thank you very much, Mr. President. My name is Adema Mooza. I come from Cameroon. I am research scholar in international affairs at Harvard University. And I'm working on what I call the Chinese equation in the new superpower scramble for Africa. And I was very interested when you mentioned India, China, the Gulf states, their investment in Africa. What is your personal appraisal of what others call the rootless Chinese vision of Africa. What's the situation like in Burundi?

PAUL KAGAME: Thank you. I think that's--

AUDIENCE: Talk about them. Compare it with European and American investment in Africa.

PAUL KAGAME: That's an interesting question. I would have been surprised if the China question didn't come up. But I have a view which I don't know-- first of all, the emergence of China and India is a very healthy development for various reasons. For one, it's in their own right to develop and develop fast and become strong.

But while people may say or write different things about that, let me confine myself to one aspect that is important to me. And that is in relation to Africa and how Africa has related to the rest of the world. First of all, my point is that we Africans, meaning the continent of Africa, really has to kind of wake up and Africa has to make itself relevant to not to be a place of natural resources of so many people and that people can also be the best among the best, yet remain impoverished remain a place for charity and favor and all sorts of things. So if you look at the emergence of China and how it has now started, people are worried about China saying it's taking over things in Africa and this and that-- that they go and put money into countries. And they don't ask questions, questions about human rights, questions about a democracy.

First of all, for me, that talk is first of all, in my view, a sign of either double standards-- because Africa has fallen prey to many others before the Chinese came. Secondly, were those people who pride themselves in saying they have been asking questions. Well, they have asked questions for 50 years. What has come out of that? They have asked questions. But in the meantime, the reports we have been getting, that there is a less democracy or there is less observation of human rights. So maybe asking questions hasn't helped either.

But we have not even seen serious investments in Africa that would make Africa a partner, a relevant partner, say to the West. The relationship has always been a relationship of pity, of charity. And of course, a big part should be blamed on the Africans themselves. It's as if we have become comfortable with that if we have a problem, there will be people coming from outside to come and address our problems.

So it's high time, and that's what, in a way, irrespective of other problems, China and India have are helping to achieve. Now, if you see people waking up and saying, oh, China, India are going to Africa taking over Africa and that in a sense, in their minds, Africa is beginning to become more relevant. And that's why China, India, and the Western countries are now fighting over Africa.

But that's not enough. That will serve well Africa if Africa is able to stand up to these challenges and to make itself relevant, whether it is oil or copper or diamond or whatever. I was talking about a while ago about [INAUDIBLE], about processing, about different things.

So I think we should start also setting terms for this relationship and benefiting from it as they should. So I'm not too worried about China or about anybody for that matter. But if people come and find you sleeping or not knowing what you want, I think all these people rip you off. They just take all that belongs to you, and by the time we wake up, they have helped themselves. So why don't we simply wake up and just make sure--

[APPLAUSE]

**SUSAN
HOCKFIELD:**

What a fine answer on which to end. I want to thank President Kagame, the Ambassador, the Minister of Education, and the whole Rwandan delegation for coming to MIT and sharing your thoughts. And I would only observe that while Kigali and Cambridge are geographically quite far apart, what we've heard today is how intellectually we are nearest neighbors in our confidence that science and technology can empower people, can build societies, can build strength in countries, and empower them to be fully participants in the modern world.

Thank you all for joining us. I'm sorry we didn't get to all the questions. But thank you, President Kagame.

[APPLAUSE]