

*N. M. Donofrio Remarks
New York State Education Summit
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Thank you, George, for that very kind introduction ... and good afternoon, ladies and gentlemen. I am truly honored for the invitation to join you today.

IBM is a New York-headquartered enterprise, and our future is directly connected to the future of education in New York State. So, at the outset, on behalf of IBM, I extend my thanks and congratulations to the Board of Regents ... the State of New York ... and Commissioner Mills for orchestrating this historic Education Summit.

As you know, the U.S. government convened an education summit 16 years ago in Charlottesville, Virginia in which the first President Bush and our nation's governors participated. Among the attendees were then-Governors Bill Clinton of Arkansas ... Thomas Kean of New Jersey ... as well as Governor Kean's education policy assistant – none other than Rick Mills.

It was important to have held an education summit back then in 1989 – because it came soon after the release of the ground-breaking report entitled *A Nation at Risk*. In that report, it was stated that if a foreign government had imposed the existing public education system on the United States, it would be considered an act of war.

That summit resulted in a set of goals for the U.S. education system, as well as an agreement among our Nation's political leaders to aggressively pursue them. They included the quest for the United States education system to become number one in the world in math and science, within 10 years. But without clear standards to back up those goals, without a sense of what really needed to be done to reach them, and without innovative strategies and plans upon which to execute, those goals simply became a set of empty promises.

Then, in 1996, 1999 and 2001, follow-up education summits were held. I know something about those because they were hosted by IBM ... and our then-CEO Lou Gerstner was co-chair and an active participant. Rick was there, too ... as Vermont's Education chief in 1996 ... and then as New York's Education Commissioner in 1999 and 2001.

Those summits were unique in that, for the first time, they included business leaders and educators as active participants. The result was an agreement on clear standards, measurements and accountability as ways to reach our education goals. There also was an agreed-upon focus on teacher quality and professional development -- to reach higher standards and implement stretch goals. New York State has done much to keep faith with the agenda of those Summits.

IBM also has participated in follow-up education summits in states as diverse as Massachusetts, North Carolina, Utah, Colorado, and New Jersey. Each of those summits had similarities -- in the make-up of participants, the agenda, standards, assessment and accountability. Each was a serious exercise. Each had some desirable outcomes. And, in some cases, we have made steady, but slow, progress. So, what is different now, other than our being in New York, and being among so many good friends and colleagues?

Truth is, not much.

Our nation is at even higher risk – not just on the pages of policy papers, and not just by the war on terrorism. America is being challenged economically in a way we have never been challenged before. We cannot afford to meet here today and talk the same talk about goals, standards, measurements and accountability, or even about the vital issues of teacher quality. All of those are crucially important, for sure, but we must now confront America's economic survival.

And that dictates a sharp focus on political will, about the will to change, the will to put our muscle and innovative thinking behind our rhetoric, the will to act swiftly and wisely to preserve our place in the world and to ensure a prosperous future for generations of American children. We need a sense of real urgency, and we need to turn our rhetoric into action. We need to take bold steps, and we need to drive dramatic change.

Why? Because the world has changed enormously since the Summits of 1989, 1996, 1999 and 2001. I travel the world many times over each year, and I must tell you that on any leader's agenda these days, few priorities are higher than innovation. Every business, government and academic leader I meet agrees that innovation is the driver of economic opportunity, job creation, and advances in virtually all disciplines – particularly education. And they are making the investments to achieve it.

For much of the past century, the United States was the world's innovation engine. No longer. The spotlight today is on China, India, Brazil, Russia, Finland, Israel and South Korea -- places to which we paid little attention a decade ago ... places that, in our eyes, existed only in the shadows.

South Korea today – having just one sixth of the US population -- graduates as many engineers as we do.

Universities in China will turn out 3.5 million new graduates this year --- up 35 percent from 2004. More than 600,000 of those graduates will be engineers -- about eight times as many engineering graduates than we will produce in the U.S. this year.

India is graduating five times as many engineers as we are.

Economic growth in China is close to 10 percent a year, and India is on the same growth trajectory.

Over the past decade, the United Kingdom, Ireland, France and Spain have dramatically increased their proportion of 18 to 21-year olds enrolled in post-secondary education.

There has been virtually no increase in the United States.

Even more sobering is that more than 50 percent of America's science and engineering workforce -- once the envy of the world -- is approaching retirement. And the pipeline of succession is just about dried up.

In our nation's middle schools today, nearly 70 percent of our students are assigned a teacher who holds no major, or any certification in mathematics. And the record in science is even worse. And if you think that math and science are the only keys to innovation, I am here to tell you that we also have deep gaps in the teaching of history, foreign languages, and other disciplines, too. They are all important keys to innovation.

I could rattle off shocking statistics all day. But what's the point? We all know them, and we are deeply disturbed by them. The real point is that we are stripping the U.S. economy of its greatest competitive advantage – a workforce of college graduates equipped with the skills needed to compete in the 21st century.

And while we plod on, our competitors are moving swiftly to create 21st-century education systems. If we fail to give our students the education, skills and the knowledge they need to deliver new value to America, we will do a lot more than just hurt our economy. We will toss today's generation of students into an abyss of social problems and personal turmoil – the awful manifestations of frustration, disappointment and unfulfilled dreams.

To follow a “business-as-usual” path is a prescription for disaster.

A while back, when Rick asked me to speak at this Summit, he pointed out that, as education leaders, you may find some benefit in IBM's insights on this issue – and also in my personal insights on the topic of innovation, and what it really means. We at IBM have learned a great deal over the past couple of years – especially through two ground-breaking initiatives which hold crucial implications for our nation's educational systems.

The first was the National Innovation Initiative -- launched a year and a half ago by the U.S. Council on Competitiveness – to devise a plan to restart America's innovation engine. The NII comprised more than 200 CEOs, university presidents and labor leaders, and was co-chaired by IBM CEO Sam Palmisano and Georgia Tech president Wayne Clough.

The NII put forth to the president, to Congress, and to America's business, academic and labor communities, a comprehensive set of recommendations needed to be taken, at both the national and state levels, framed around three pillars of innovation --- Investment, Infrastructure and Talent.

The other ground-breaking initiative is one IBM launched last year called the Global Innovation Outlook. The GIO, as we call it, was an experiment with no rules. We brought in hundreds of partners from multiple disciplines around the world – large and small business, government, venture capital firms, think tanks and, of course, academic leaders.

We held intense brainstorming sessions in key locations across the globe to focus on critical societal issues such as healthcare, government and citizenry, the work-life balance, and education. And this year, we are at it again --- gathering multi-disciplinary insights on issues such as transportation and mobility, the enterprise of the future, and our environment.

There is simply no time to detail the entire scope of the NII and the Global Innovation Outlook today. But I will highlight a few of the findings from both initiatives, because they are highly relevant to this Summit.

First, we learned that you do not create game-changing innovation simply by increasing budgets – even though more resources are needed.

You do not drive innovation by assigning accountability, setting standards and establishing measurements – even though you must do all of that.

More important, you do it by creating an environment that enables innovation to thrive.

And that means understanding the process of innovation — how it happens, where, by whom, and at what pace it happens — all of which are changing today in dramatic, fundamental ways. In fact, the most important innovation going on today may well be in the changing nature of innovation, itself.

Innovation happens a lot faster now, and it diffuses much more rapidly into our everyday lives. It is far more open and collaborative – spanning disciplines, industries, and the public and private sectors. And it is global.

The collaborative, multi-disciplinary and distributed nature of innovation means that it almost never arises in the isolated laboratory or garage anymore. It arises in the marketplace, the workplace, the community, the classroom. To the extent we can understand that, is the extent to which we can begin to drive crucially-needed change.

For example, we learned that in these early days of the 21st century, workers no longer can rely on the expertise they gained earlier in life to keep them at the front of the skills queue.

It is unlikely that our K-12 and university systems will be able to keep abreast of the fast-changing, dynamic nature of work we experience today and tomorrow. If we continue to do what we did in the past, we will lose.

We must help our teachers learn how to teach analytical skills, how to apply multi-disciplinary knowledge to a problem, how to inject deeper meaning and relevancy into classroom materials, how to manage ambiguity.

So what do we do?

We can start by accepting and endorsing the Summit agenda. We can commit ourselves to improving early-childhood education in New York State, better academic performance in the middle and high schools, and getting our children ready to pursue a higher-education experience very different than what we pursued in the 20th century. But that is only Step One – albeit a very tough step one.

We need to mobilize all of the resources we have, all of the experience and expertise assembled in this room, and in the organizations and institutions we represent. We need to stop operating in silos. We need to stop fighting over turf. And we need to start collaborating – across disciplines, backgrounds, and points of view.

For example, we at IBM recently launched an initiative called “Transition to Teaching” – a program to match critical skills to teaching opportunities across the state. Through the program, we will pay our mid-to-late career employees interested in second careers to take the education courses they need to pursue new careers as math and science teachers.

We knew we could not pull this off by ourselves. Instead, we are collaborating with the SUNY and CUNY systems, as well as with the State Department of Education, to develop a new model customized to those IBMers and to the New York schools. That gives us confidence we will get it right the first time when we launch this year.

Think about it. If just nine other businesses committed to a program like this, we could produce a thousand highly-trained math & science teachers every year – beginning in 2006.

The State of New York must embrace a goal of doubling the number of math, science and engineering graduates by 2015 – and we can’t do it without great teachers.

Right now, New York is below the already-inadequate US national average in that regard.

Simply put, we must become innovation educators. And we must transform and realign our education system to prepare students to become innovators.

Reform must start by dramatically raising teacher quality as the key to elevating student achievement.

We need to revamp how teachers are trained by increasing “content knowledge” -- that is, knowing the actual content of math, science and other academic subjects, rather than simply following the method of teaching.

We must offer more opportunities for student teaching -- or “practice teaching” – as opposed to learning in a lecture class.

And must link more teachers to mentors.

Once in the classroom, teachers need access to the best lesson plans, the most comprehensive data on student achievement, and the ability to work with mentors to help them be better and do better.

And we must demand the highest-levels of professionalism and performance from our teachers, increase their compensation but differentiate their pay through incentives and performance-based metrics, and work to elevate their stature and the incredibly-important role they play in the community.

We need to cultivate real leadership in our State's schools by developing and supporting a new cadre of school leaders who embrace innovation and performance.

But more than anything, ladies and gentlemen, we need to work together. Business people and educators, parents and not-for-profit organizations, political leaders and the members of the community. We all have a stake in the future of New York.

As for me, I am a born and bred New Yorker -- rooted in the Hudson Valley -- K-8 at St. John's Grammar School in Beacon, and a graduate of Beacon High School. I earned my BS in Electrical Engineering at RPI with the help of New York State Scholarship money and a paperboy scholarship from the Beacon-Newburgh News. I earned my EE Masters from Syracuse while working full time at IBM in the Hudson Valley. And I was deeply moved when I received an honorary doctorate from Marist this past summer.

And, I am proud to tell you that for 41 years I have been with a New York-based, global information-technology company that is the largest and, to me, the best in our industry.

I hope you know that you have my pledge -- backed by the commitment of the IBM company -- to help drive us forward on the path of success.

What I have outlined, here, represents a big, tough job. Our schools simply can't be left to go it alone, while the rest of us watch from the sidelines.

We have world-class science museums, art museums, rich arts & scientific resources, global business enterprises and world-class universities.

But, with few exceptions, those resources are outside our school walls. We need to bring them in. We need those resources to become full and equal partners, to improve student achievement.

As we work to transform our talk to action, innovation must be our engine and urgency must be our fuel – for every step, through every milestone.

Innovation – the process of innovation – the collaborative, multidisciplinary, open nature of innovation – will enable all of us to build a brighter future for our students.

Our commitment – in thought and deed – will ensure that, every day, we earn our proud name ---- The Empire State!

Thank you very much.