Session - 1

Chief Guest Address

सत्र - १

मुख्य अतिथि द्वारा दीक्षान्त अभिभाषण

50th

CONVOCATION

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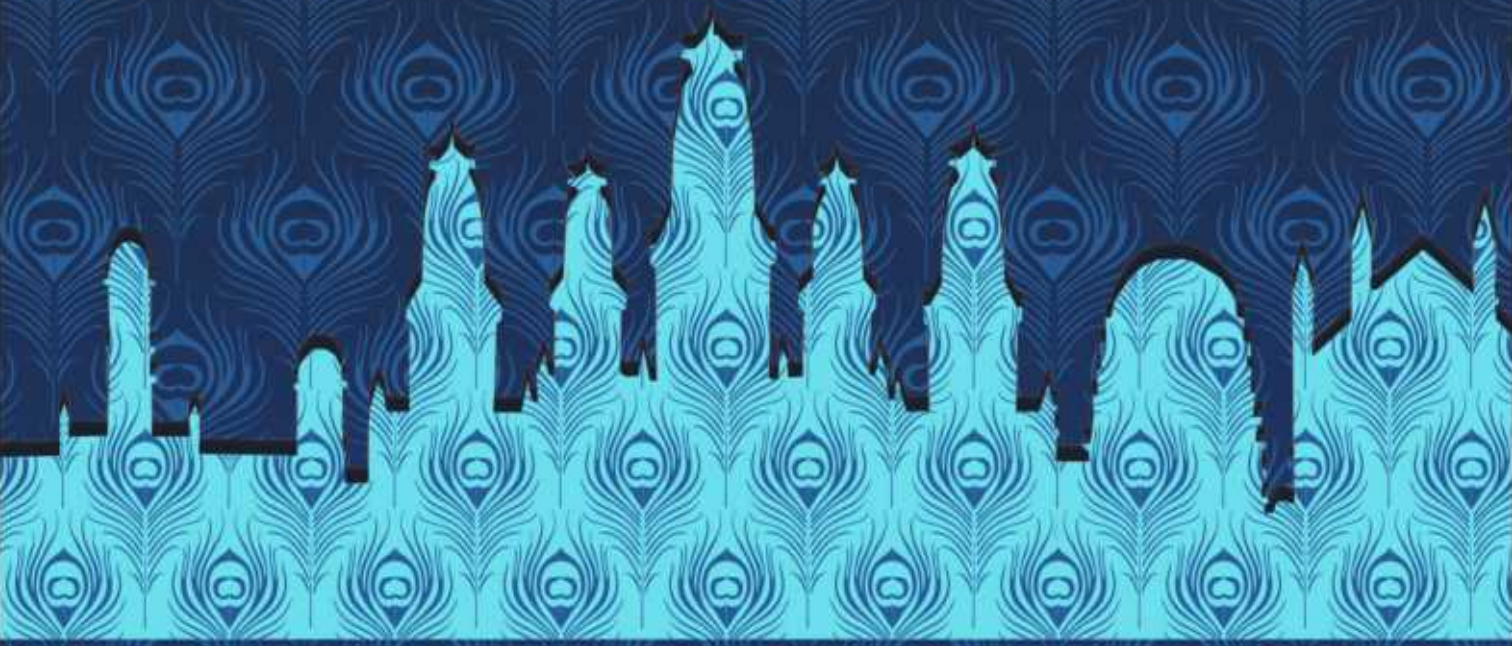
Indian Institute of Technology, Kanpur

भारतीय प्रौद्योगिकी संस्थान, कानपुर



Address by

N Chandrasekaran

Chairman, Tata Group on the 50th Convocation of IIT Kanpur

Respected Guests on the Dais,

Graduating Class of 2017

Ladies and Gentlemen,

It is a great privilege for me to be here on this august occasion. I admire IIT Kanpur, for the tradition of excellence that this Institution has established, in education and research. Your Institute's rich heritage speaks for itself, including the fact that IIT Kanpur was the first Institute in India to offer computer science education, way back in 1963, well before the IT revolution came to our country.

From its very inception, IIT Kanpur has established a reputation for excellent education, for conducting original research and driving technological innovation. This is credit to all faculty and students. My heartiest congratulations to your Institute, on being respected globally today, as a world-class technology Institution.

It is an honour for me to address some of the brightest minds in the world, assembled here today. Today, you are graduating with a sense of great fulfilment. But you are also graduating with a happy responsibility on your broad shoulders: as Brand Ambassadors for one of the world's foremost science and technology Institutions. Carry this responsibility with pride, and I am sure you will make your Alma Mater proud.

As you get ready to step out from this verdant campus into an India brimming with possibilities, I am sure all of you have mapped out your future plans and your immediate ambitions. What I will do today is share with you some perspectives on India, and on the exciting age of digital that we live in.

You are fortunate to be graduating at a time when India has so many big and diverse opportunities, in virtually every Industry and sector – from startups to large Corporations, from Government to non-profit sectors, from Kanpur to Kanyakumari – there are opportunities all around us. Whether you are keen on fintech or clinical research, manufacturing or aerospace, analytics or automation, this is a great time to build a career in one of the world's fastest growing economies. This is a great time to be in India, and may I add that the best of times are still ahead of us.

Look at some facts that mark new-age India.

- Today, India is the second largest market globally for the new consuming class – and this consuming class has grown from 7% of Indian households two decades back, to 25% of all Indian households today. Virtually every global survey shows that Indians are very optimistic about the future.
- The annual FDI run rate is US $ 75 billion, which is not far short of what China received at the height of its growth boom in the mid-2000s. Over the past five years, FDI as a percentage of GDP has doubled, to 4.5% at the end of 2017. Clearly, the world is looking at India, as a bright spot on the global economic map.
- Significant reforms such as GST will further spur investment and growth in economic activity, and over the next two decades India will retain its star ranking as one of the world's fastest growing economies.

While all these are pointers to robust economic growth, what excites me even more is how closely India's rise as an economic powerhouse is now intertwined with the development of our digital economy. India's digital metrics are all trending strongly, in the right direction.

- India has the third largest start-up base in the world, with over 4,750 technology start-ups today. Over 1,400 new technology start-ups were founded in 2016 alone, according to a NASSCOM study.
- Every day, more Indians are using more technology, led by the smartphone, of which over 27 million are being shipped each month.
- Falling data costs are fueling higher date usage, which is up 9x, to 1.2 billion GB per month, as the cost of every Gigabyte is now 56% lower than it was 3 years ago.

Over just nine months, digital payments through the Unified Payments Interface (UPI) has grown from zero to US $ 359 million per month, and this number is rising very fast.

This rapid "digitization" of India is very significant because the shift to digital is not just another change. It marks a fundamental transformation of our world. In fact, this will be one of the most remarkable periods of human history, and our own India will be at the vanguard of this revolution.

Some have called this the Fourth Industrial Revolution, or Business 4.0. Others have termed this as the move from an "information" society to an "insights-driven" society. Whatever you call it, one thing is clear – the shift to digital will create yet another new world.

For much of human history, our living standards were low and somewhat stagnant. It is only in the last 200 years that we have seen dramatic improvement in the quality of human life. This was initially driven by the first industrial revolution, powered by the steam engine in the 1800s, which transformed manufacturing and transportation.

Thereafter, from 1900, electric power lit up our world even brighter, by taking productivity to a new level. These two technology breakthroughs increased the size of the global economy by over eleven times, compared to the pre-1800s.

Many decades later, since the 1970s, came the wave of computers and later the internet. This enabled humans to work with, communicate and use large amounts of information in quick time. This breakthrough, representing the third industrial revolution, ensured that the world economy expanded by 37 times during 1970-1990.

Today, we are in the first stages of another exciting revolution, which is likely to be even more powerful – a world driven by digital, data and insights. In this new world, technology is not merely an enabler of business. On the other hand, this is a world where business is getting embedded in technology.

For instance, technology has given rise to a fast-growing sharing economy, which was entirely unknown a few years ago. Ride sharing. Room Sharing. These represent the type of transformative new industries which have emerged as data has taken centre-stage.

Let me explain my own view of this transformation. For the past two decades, technology progress has been used to refine and shape every process in an enterprise, and this has enabled Companies to become efficient and optimize their operations. But in today's digital world, process maturity has become table stakes for everyone. What matters is data maturity, the insights and the power that data provides, that will spell all the difference between success and failure. Therefore, Companies world-wide are busy transforming themselves from being process-centric to being data-centric.

Here is another lens through which you can view this. Companies used to compete on how they did things, the process. Successful companies became leaders because their processes, or their "way" of doing things, gave them an advantage. Today and in the future, such advantage will be transient, and may not even exist.

On the other hand, successful organisations in this era will be those that can take in all data around us, analyse this live-stream of data better than others, use the insights from such data to create services or products that consumers want, even before they know that they want them. Some people have called data the new oil. I think data will be the new oil, and also the new gold.

As digital technology becomes more pervasive over the next few years, we will see the next exciting shifts happening. There will be even more interlinkages between digital technologies and the real world around us. AI and robotics, social media, mobile and cloud computing, big data and analytics, 3-D printing and the internet of things will be totally intertwined into our daily lives.

Similarly, interactions are no longer limited to people, but are increasingly taking place between people and machines (or bots), or even between two machines who are functioning off the data provided by one another. By 2020, 50 billion devices will be connected to the internet. This will be the central tenet of the fast evolving "man-machine continuum" – a global network of humans and smart machines, inter-dependent on each other, working in synchronicity, real time, to crunch data, solve problems and transform the world.

For all of us in India, this is where the real challenges, and thereby, the big opportunities lie.

On the one hand, we have significant shortage of critical skills that are essential – doctors, nurses, teachers and researchers. We do not have the time or resources to scale up. On the other hand, we have 90 million people joining the workforce by 2020, and we need to urgently create jobs for them.

The big challenge, and the big opportunity, is to use Digital to bridge this gap.

- How do we use the digital forces to augment our physical assets like hospital and specialist doctors manifold? So that we can extend education or medical services to many more people across the country, in a more optimal and timely manner? So that we can also create new opportunities for those entering the workforce, with different levels of knowledge and skills?

India, I would submit to all of you, is ripe for this type of innovation. We are seeing this all around us, in the way digital payments, ride sharing, hospitality platforms, healthcare and even citizen services are evolving so rapidly, putting the Indian consumer at the centre of the digital value chain.

For instance, just two years ago, who would have thought that a smartphone coupled with a Government database could transform something as grassroots as financial inclusion in India?

India is the only country where one's fingerprint is necessary and sufficient to authorize and conclude a financial transaction. Tata Consultancy Services, for instance, has created Merchant Pay, a payment mechanism where using a smartphone and a fingerprint authenticated by the Aadhar database, one can buy products, or pay for services, using the Aadhar linked bank account. This is an easy to use solution for 19 crore Indians who have Aadhar linked to their bank accounts. It is not only frictionless but also overcomes the challenge of low penetration of credit and debit cards, as well as smartphones.

To a greater or lesser degree, we all live in a phygital world today – Where our Physical world is reimagined by overlaying it with a Digital Layer so that we can get much more out of our real assets.

Take doctors for example. As a nation, we do not have the time or the resources to scale up at the rate needed to build 500,000 more doctors than we have today. So, what can we do?

To scale up quickly and reduce the patient to doctor ratio, we need to create a new medical eco-system, staffed by "super-specialists" like doctors and other specialists like paramedics.

We must break down specialist roles into a series of lesser skilled roles and have a larger set of people participating in the process. A good example is in the field of medical treatment where "paramedics" responding to emergencies are not doctors but trained well enough to stabilise patients and provide a basic diagnosis.

Today in India, 52% of an oncologist's time goes in non-medical tasks. What if there was a central database on the cloud, where patient data from all hospitals streamed in – structured data like reports and unstructured data like doctor's notes, prescriptions etc – were stored and available real-time on mobile. And to provide customer service, a connected digital nerve center where trained personnel responded to patients and assisted them to smoothen and hasten the entire diagnostic and treatment process through multiple digital channels.

New Phygital systems will have a huge impact on how we train people; how we drive productivity in the economy; and how we unbundle our capabilities to create jobs; and how we impact more people positively

This is where we need the maximum innovation – not only of the type that finds new cures for diseases but last-mile innovations that can extend what we already have, to many more Indians effectively and digitally. From education to health, from power to water, we need to innovate to ensure that we can use data and insights to channel our physical resources in the most optimum way possible.

This type of innovation also requires greater collaboration across different sections of society. We need to build new eco-systems that encompass the entire value chain of a sector. Today the real value lies at intersects of that value chain. And that will require us, as individuals and organizations, to undertake intensive collaboration to capture this value.

So, let me conclude by re-emphasizing that India is today a place of great opportunity. The advent of digital and data has multiplied our country's potential manifold, and will make many new transformations possible. Here is an opportunity for each of you to become key agents of this transformation.

This Institute, IIT Kanpur, sits on Grand Trunk Road, the original national highway of our country. As India now builds its new digital and phygital highways and networks, which are its new-age Grand Trunk Roads, many of you will surely become architects of this future.

Congratulations, Class of 2017. I wish you all the very best for a bright and fulfilling life ahead.

And of course, I would be delighted if some of you decide to join us in the Tata Group, as we apply our energies to building a new India.

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