Driving Innovation through Technology

Sweden India Business Council, Business Gothenburg, SKF

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Remarks
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Friends,

Thank you for inviting me here today.

It is quite apt that we are discussing technology and innovation at SKF, one of the global pioneers in coming up with innovative engineering solutions. And one the major Swedish companies that has a long association with India going back a hundred years !

Innovation and Technology are one of the key strengths of India Sweden partnership.

It is also of great importance in the wider India EU context. As some of you may have followed, the President of European Commission is currently in India and yesterday she announced the setting up of an India EU Trade and Technology Council. She referred to the energy and digital technology among key areas of cooperation. She was speaking at the Raisina Dialogue whose theme this year was Terra Nova – the new and unfamiliar terrain that we find ourselves in today, and role of Technology in shaping that.

I would like to start by referring to some broad trends in this context. Climate Change, Covid19 pandemic and sustainable development goals are some of the areas where we are witnessing technology interventions at a large scale.

We have seen in the recent pandemic technology breakthroughs not only in life sciences and healthcare by way of vaccines and drugs but also in fintech and education for instance. Climate action brings together several sectors including energy, transport, industry, and circular economy. I was at Volvo CampX this morning where I saw some of the innovation being done in electric mobility and autonomous drives. The SDG agenda requires solutions for access to water, affordable energy, sanitation, health, education among others.

Technological innovation has always been a game changer through human history.

From stone age to the Anthropocene has been a long journey.

The pace of change picked up over the last two centuries.

The Industrial Revolution mechanized production by controlling steam energy. The Second wave was led by the control of electricity that transformed communication, transport and manufacturing. And the Third revolution was pushed by computing machines and internet connectivity. During the last hundred years we developed skills to manipulate the atom, the cell, and the byte.

And now the Fourth Industrial Revolution is fusing the physical, digital and biological spheres and accelerating change exponentially.

Today Digitalisation, Artificial Intelligence, Internet of Things, Big Data analytics, Blockchain, Cloud computing, Robotics, 3D printing, Drones, Genomics, Nano technology, collaborative consumption, energy storage, geospatial analytics, 5G, all are driving this change.

This intersection of technologies is creating an unprecedented multiplier effect. Disruptive technologies are not only found in smart homes with voice-user interface but also in the financial inclusion and empowerment of the poor.

At the same time, the global industrial and economic model is now posing serious concerns regarding sustainability. Technological innovations again hold one of the keys to a more sustainable future.

This time the transformation has to be consciously green.

We are seeing exciting stuff in innovation in technologies, for instance, in Green Hydrogen, Green steel and Green batteries. This industry transition is an area where India and Sweden have taken an important global initiative LeadIT.

Not only the traditional manufacturing industries are being transformed, but completely new and innovative tech-enabled solutions are disrupting traditional services, education, healthcare, banking, commerce, entertainment, media, travel, law, governance, safety, and politics globally.

Unlike in the past, the capacity of developing countries to adopt disruptive technologies is increasing. As is its potential to enable economies and societies to leapfrog to the next stage of development.

Such a transformation is underway in India. Pandemic has, in fact, accelerated some of these transformational changes.

Collaborative research for vaccines & drug development, competitive online education services, online consumer applications and fintech have got a boost.

New startups are getting recognised globally for coming up with affordable and portable solutions to convert farm waste to produce biofuels and reduce pollution.

Some are engaged in 3D printing rocket engines or coming up with greener propulsion systems for satellites.

The economy is bouncing back. According to IMF, the Indian economy is expected to grow at 8.2% during this year, the fastest among large economies.

For the Financial Year 2021-2022 India's exports of goods and services have crossed record levels.

In 2021 despite Covid, 44 new unicorns emerged from India. The highest in the world.

Tech companies in India raised close to USD 9 billion in the first quarter of this year. 10 more Indian companies have joined the unicorn club.

The FDI figure for 2020-21 for India was more than USD 80 billion, which is a record.

The growth in India's digital transactions has been explosive. **In 2020 the real time digital payments in India were more than 25.5 billion.** This number exceeds the total number of transactions in China, US and UK.

In 2020 technology deals in India accounted for more than USD 10 billion.

All these numbers tell the story of the transformation that is underway in India. And they are also indicators of the investor confidence. In the growing dynamism and scale of the Indian economic opportunities, especially in tech-enabled business models at an early stage.

When I was discussing today's interaction with Robin, it was suggested that we could also talk about Digital India. That it is not only about the scale but how it is having a transformational effect across Indian society and economy.

I will try and see if I can share some sense of this.

As you are aware, India is home to one sixth of world's population. It has a continental scale and diversity.

The scale of challenges is huge and varied.

Change has been mostly uneven, slow and costly in the past. But now technology-enabled interventions are driving a huge shift.

Digital infrastructure is like the internet or GPS or highways, a set of technologies whose **disruptive power** is in the exponential applications that they enable.

Only 7 years ago, less than 20% of India's population was connected to internet and only 15% had access to mobile phones. The use of credit cards was also quite limited.

In an ambitious effort, India has been building a **state-of-the art digital financial infrastructure for public welfare**, which is **rapidly transforming the economy also**.

This is perhaps the **world's only public digital platform where government entities have created digital public goods. It is open and free.**

What enables the disruptive power of India stack is that it is **open source**. This open-source platform then allows a number of public and private innovations to take over and offer various services.

This is now fostering innovation and competitiveness. This is empowering common citizens, business entrepreneurs and consumers alike.

This digital infrastructure is known as the **India Stack** that allow a user to access services digitally.

The India Stack has independent layers that individually facilitate different things - proving the **digital identity** of the user, making **digital payments** or transactions, providing a digital **KYC**, signing documents digitally and **sharing of data** digitally.

These digital transactions are **presence-less, paper-less and cash-less**. And are based on **consent**. These layers, therefore, **lower the cost of each transaction, simplify compliance and reduce leakages**.

The first layer comprises the **unique biometric-based digital identity** known as **Aadhar**. This is **secure, minimally intrusive** and allows **presence-less** transactions.

The second layer known as **UPI** (Unified Payment Interface) was designed to provide a **low-cost payments system that worked on high volumes of low value transactions**. It allows instantaneous **cash-less** transactions. All transactions can also be logged and stored in the DigiLocker for sharing a summary for evaluation of credit worthiness.

UPI provides a set of interoperable APIs that innovators can use to build payment apps. Almost all banks in India use UPI specifications for transfer of money. Therefore, there has been an explosion of payment apps, including by the global majors.

Apps were created to serve even those who do not have access to smartphones. A user can use any app to send or receive money directly from their bank account. This has increased competitiveness, responsiveness and performance.

Another layer is the **DigiLocker** alongwith **a digital signature**, which works as a repository of storing authenticated documents for quick access. This allows **paper-less** sharing of personal data on any platform based on **consent**.

Now an **Account Aggregator framework** has been introduced to enable innovation for **consent based encrypted data sharing** both on individual and business levels. Such data could be spread across multiple services and bank accounts. Overall regulation will be by the central bank.

All this has allowed India to leapfrog by revolutionizing access to finance. **It enables innovation at scale**. For instance, combining heathcare needs with insurance or access to credit. It makes **delivery of financial services, credit or market place easy and cost-efficient** for enterprises of all sizes.

These innovative public interventions enabled by digital technologies have vastly empowered financial inclusion and at the same time fostered private innovation that has catalysed entrepreneurial activity that is also helping the small businesses.

The poor and previously unbanked population now have access through technology to instantaneous delivery of direct benefit subsidies and other services.

At the same time e-commerce, online education, skills development, tele-healthcare, agritech and now availability of banking, credit and insurance services are being transformed. Some of this has also been helped by the constraints imposed by the pandemic.

In the last five years, the subscriber base for mobile broadband in India has doubled to 765 million. Average data use has increased three times to 17 GB per month per user. This reflects the lowest cost of mobile data in India in the world – at 0.07 USD for 1 GB. India's share of mobile app downloads is 15% of the world's total. Mobile phone subscriptions are around 1.2 billion.

Government has announced that India will soon launch a Digital currency backed by the central bank - the Reserve Bank of India. Government has also announced the setting up of Digital Banking Units by the Commercial Banks.

Just as the digital infrastructure is being transformed in India, so is the physical infrastructure as that is the key to manufacturing and employment and the overall economic growth.

Massive investments are now flowing into building highways, tunnels, bridges, upgrading railways systems, ports, airports at an unprecedented scale. The Gati Shakti campaign is focusing on integrated multimodal logistics. To cut costs of doing business. And infrastructure is proving yet again to be a business and employment driver.

Production Linked Incentives are catalysing various manufacturing sectors. These include, for instance, solar panels, semiconductors, hydrogen, and medical devices.

At the same time ambitious targets are being set and being achieved in renewable energy so that graphs of economic growth and energy intensity diverge.

Delhi Metro runs on solar power generated a thousand km to the south. Cochin airport runs on solar power. Massive wind parks have come up. Just as the mobile data costs have been reduced in India increasing the data usage, the operating cost of generating solar energy has come below thermal.

A National Hydrogen Mission is being pursued to make India an exporter of green hydrogen. The targets are again very ambitious to operate at scale and bring down the costs.

Electric mobility is on the rise.

Nearly 400 million LED units have been distributed in recent years by Government. Almost 40 million LPG connections have also been distributed. This is helping both cost savings and climate action.

Prime Minister Modi has announced that by 2047, the hundredth anniversary year of our independence, India plans to become 'energy independent'.

Startup ecosystem is flourishing in India. A national Programme on Artificial Intelligence is also underway.

The division between traditional industry and tech-enabled counterparts continues to blur.

All these efforts feed into each other and have a multiplier effect.

India's rankings on Innovation, Ease of Doing Business and Competitiveness are improving.

Recent weeks and months have also seen India pushing ahead with a series of FTAs with various partners, including UK, Australia and UAE. India EU negotiations on FTA and Investment agreement have recommenced.

We hope that the upcoming Swedish Presidency of EU early next year will also provide a boost to this.

The intense diplomatic and economic engagement with India that we are witnessing is the acknowledgement of the huge scale of opportunities for collaboration that make eminent business sense.

Thank You.