Outline of keynote speech on

Locating India in Indo-Pacific's transition to digital & green economies

by Prof Swaran Singh
Jawaharlal Nehru University, New Delhi

The hyper trending digital and green technologies have changed both the contents and connotations of growth, employment and power dynamics, heralding a new economy and triggering new competition for global leadership among major powers (the United States, China and European Union) that are seen competing in shaping new rules and regimes of global governance. Critical questions that this workshop seeks to address are how middle powers (like India, Japan, ASEAN) are responding to this transition? What are the new challenges and incentives for them? What are varying typologies of state responses and why? And finally, does all of this entail greater state intervention in industrial policies? In this presentation, I attempt to locate India in these broader structural transitions.

The story perhaps begins from the 1980s when, among others, David William Pearce of the University College London had put rigour in explaining how good economics must enfold environmental factors; and, how this was both morally sound but also commercially smart. His bestseller *Blueprint for a Green Economy* (BGE) presented policy measures for 'greening' modern economies to put these on a path of sustainable development. The BGE's gave concept of 'Natural Capital' inclusive of not just materials or services available in nature but the sustenance of the whole ecosystem of Nature. Preserving this natural capital, which he saw being overexploited, was presented as a prerequisite for 'sustainable development'—the other major concept of 1980s. The World Commission on Environment and Development (or Brundtland Commission) defined sustainable development as "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs." It is this 'sustainability' that has come under question, triggering the search for alternative modes of production, exchange and consumption.

Over the past three decades increasing consensus on the irreversibility of climate change has especially cast the most serious doubts on the sustainability of current industrialisation and urbanisation driven models of human development. The UN Habitat shows how cities today consume 78% of the world's primary energy and account for over 50% of global greenhouse gases. In the last three years, Pandemic Coronavirus-19 has further highlighted such dysfunction—triggering debates about redesigning of global governance structures, especially supply chains, thus putting a critical focus on digital and green economies as key solutions. What makes digital and green technologies potent drivers also lies in their being Siamese cousins in complimenting each other. While the former is a prerequisite for the latter, the latter seeks to guide the former's trajectories and innovations.

Digital economy integrates tools like artificial intelligence, big data, the internet of things, cloud computing, blockchain to 'green' all modes of production, exchange, consumption. In Digital Economy, all sectors take data as the key production factor and information networks as main carriers for innovation, optimisation, modernisation. For instance, digital and green technologies reduce carbon emissions by being efficient and cost-effective by connecting all

components of the production-distribution-exchange-consumption cycle. Digital Economy supports Green Economy in multiple ways: by matching supply and demand to escape overproduction and wastage and in providing optimal global marketplace for Micro, Small, Medium Enterprises. There is also a counterview that Digital Technologies require energy and other resources for the manufacture, processing, operation, distribution of electronic equipment which increases energy consumption and damages the environment. These also create new needs for additional infrastructure that is required to make digital and green technologies deliver. It leads to electronic waste as well.

However, overall the green total factor productivity (GTFP) is widely employed to show how green development (that accounts for environment factor into productive efficiency) supports this structural transition as it promotes clean energy, energy conservation and better waste management. Therefore, digital and green technologies have together come to be the biggest enablers in achieving targets of UN Sustainable Development Goals by 2030, including driving carbon footprint reductions. These have encouraged nations to set targets for their carbon peak and becoming carbon neutral. Amongst others, the United States has announced achieving these respectively by 2007 and 2050 and China by 2030 and 2060 and India by 2030 and 2070.

Now, why is Indo-Pacific critical in understanding these global structural transitions?And also, for dissecting the nature of global contest among Washington, Beijing and Brussels with each trying to become the default mode for global governance. To begin with, Indo-Pacific is today world's largest and most rapidly growing internet user base that accounts for 50% world's internet users. Most Indo-Pacific users are younger populations and 90% of them access internet on phone. The Indo-Pacific region is booming with e-commerce and growing FinTech applications. While the United States-China trade and technology wars have remained the driver of Indo-Pacific geopolitical contestations, geo-economics has since come to be another critical pillar creating space for others like European Union for pushing their own alternative governance models. Still, others like India, Japan, ASEAN (categorised as middle powers) have been engaged in exploring 'autonomy' while balancing between the United States and China. Pandemic years have further enhanced their reliance on the internet, consciousness about well-being and forced a serious rethink on governance models.

In launching his Indo-Pacific Economic Framework (IPEF) in May 2022, centrality of this region was underscored by President Joe Biden when saying that the future of 21st century economy largely is going to be written in the Indo-Pacific. The IPEF is the United States' governance model for the Indo-Pacific and involves most vibrant 13 regional partners that account for 40% the global economy. But it has serious limitations from the word go. First, understandably the world's second biggest economy and the epicentre of Indo-Pacific transformation, China, was not invited to join IPEF. Second, the IPEF has four pillars namely, trade, supply chains, clean economy (energy, decarbonisation, infrastructure) and fair economy (tax and anticorruption). Of these, Trade pillar has nine-sub-themes (labor, environment, digital economy, agriculture, transparency, good regulatory practices) that make it most critical for transition to digital and green economy. World's fifth largest and fastest growing among G20 economies, India, has chosen to stay outside of this pillar.

China, by comparison, is projected to cross the United States to become world's largest economy by 2030. It is the fastest growing new player in digital and green technologies. In 2021, China's digital economy contributed 39.8% to GDP making it world's No.2 after the United States. Much of the global growth in renewable base of electricity comes from China. For comparison, the United States and European Union each contributed at much smaller scale of about 8% to that global increase in digital economy. Second, electric-vehicles have become the key technology for decarbonising. For this, over 50% of world's lithium reserves are in Australia, Chile, and China. However, in processing lithium into batteries, China's share is 60% followed by Chile 25%, leaving the rest of 10% for Australia and others. Likewise, China accounts for 85% of rare earth processing, 65% cobalt and 40% copper and nickel. When it comes to China's role in promoting digital and green economies in the Indo-Pacific, Beijing's Digital Silk Road presents an imagination contrarian to that of the United States: China model asks no questions about human rights, democracy, lack of transparency. The Alibaba's 'city brain' urban control centres that monitor/streamline traffic, detect accidents, notify fire stations are seen in the West as 'surveillance' and countered by narratives on transparency through their Free and Open Indo-Pacific formulation.

The European Union (EU), an advocate for norm driven global governance, has also become engaged with the Indo-Pacific transition towards digital and green economies. Unlike both the United States and China, EU is seen committing itself to an increasing engagement with governments, commercial and civil-society stakeholders in the region for creating inclusive systems for promoting users' rights, data privacy, free flow of cross-border data. The European Union has sought to promote digital and green technologies starting with bilateral mechanisms based on 'shared values' aiming at creating human-centric digitalisation for inclusive economies. The EU has created Trade Technology Councils (TTC) with the United States, Japan, ASEAN and others. However, the EU has not found many takers other than its partners (like India, ASEAN) or friends (like the United States, Japan, Australia). For instance, in February 2023, India-EU TTC had set up 3 Working Groups: (a) Strategic Technologies, digital governance, digital connectivity (b) Green and Clean energy Technologies, (c) trade, investment and resilient value chains. India also advocates norm- driven global governance and has launched its own domestic and multilateral initiatives.

The India story must begin by highlighting India's capacity as a digital heavyweight in search of recognition. This can be measured using indices of its internet access, mobile access, data consumption, start-ups, trade in services etc. India is a massive consumer of electronics with its electronic imports reaching 96 billion for 2018. Looking at its overall growth trajectories, India is world's fifth largest economy and projected to become third largest by 2030. But India is also world's 3rd largest emitter of greenhouse gases and has accordingly announced targets of delivering carbon peak by 2030 and becoming carbon neutral by 2070. Amongst others, India has launched several missions including its $14 billion 100 Smart Cities Mission. Water management and plastic recycling are other important areas in focus. Serious focus has also been on green hydrogen (by splitting water into H & O) in an electrolysed powered electricity generation significant de-carbonisation through digitisation.

As for India joining regional alternative regimes, it has been careful in not binding itself in

multilateral Free Trade Agreements where it does not have much say and bilateral FTAs are preferred. India has also sought to differentiate its alignments based on geopolitics and geoeconomics which has seen it joining the Quad yet staying with BRICS. India stands firm and at variance on some issues like digital sovereignty (some call it techno-nationalism) which explains India's stance on RCEP, IPEF, CPTPP. Meanwhile, India has launched its own global initiatives like International Solar Alliance (ISA), Lifestyle for Environment (LiFE) and Coalition for Disaster Resilient Infrastructure (CDRI) etc.

In terms of India's domestic transition towards digital and green economies, expanding share of green energy has come to be India's central focus. Installed capacity of its green energy stood at 94GW in 2021 and 111GW 2022 with a target reaching 275GW by 2027. Solar energy has been central to India's green energy spectrum followed by wind, biomass, small hydropower projects. In year 2021 Solar and Wind power respectively reached capacity of 40GW and 39GW. In its transport systems, electric 2-wheelers have become key accounting for 61% of total E-vehicles. In total India produced 0.5 million e-vehicles made in 2022 and it has a target of electric vehicles reaching 30% of total automobile production by 2030. India now allows 100% FDI in renewable power generation.

Against this backdrop, the United States (IPEF), China (RCEP) and the European Union (TCCs) are seen aiming to shape their respective regimes for digital and green economies which are respectively stereotyped as liberal, authoritarian and heavy regulation driven alternatives. Recognising this diversity of proposed alternatives, experts have called it "Splinternet" involving divergent regulatory approaches leading to fractured global system which, even in best case scenario, is triggering the building of complex digital walls. Second, there is also this critical and urgent need for each of the stakeholders to cultivate domestic legal regimes and constituencies to sustain the advocacy of their proposed alternatives. In January 2017, driven by labor unions, pharmaceutical industry, environmentalists and their supporters in US Congress, Trump administration was made to withdraw from the Trans-Pacific Partnership. Now President Biden is pursuing his IPEF as an executive undertaking. But its success and durability will need domestic buy-ins. China has meanwhile moved to launching of Global Development Initiative that seeks to connect man and nature.

Three years of pandemic have accelerated internet use and digitalisation bringing upfront the need for economic redemption via digital and green technologies. However, collective challenges of climate, pandemic and economic deceleration have not triggered collective responses. Second, market forces are not seen as capable of delivering structural changes in time to avoid climate related and other emergencies as their profit driven focus has sought refuge in carbon credits. This has seen states intervening in accelerating required structural transitions using tools of tariffs and subsidies as also enunciating new Industrial policies. This is where states have found themselves differently leveraged by their strategic cultures, political systems, material resources and global alignments. This transition to digital and green economies (e.g. semiconductors) also showcases increasing intertwine with national security legitimising state intervention in market practices.

With all these disjunctions though, collectively the world has also marked a noticeable rise in share of renewables in electricity generation going up from 20% 2010 to 29% 2021 while share of hydropower share has shrunk from 80 to 50% giving way to solar and wind power. But for digital and green economies to driver on their promise in the indo-Pacific calls for

streamlining extant disjunctions amongst these multiple stakeholders which in turn calls for geo-economic emerging autonomous of the deep-rooted geopolitics of yesteryears.