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# **Digital economy policies for developing countries**

By Parminder Jeet Singh\*

Digital economy is a given, as much as industrialization was inevitable on invention of means of incorporating steam and later fossil fuel and electric power into manufacturing. It is not a matter of being for or against it. It is about what kind of digital economy we should have. A development agenda for digital economy needs to be articulated, based on a narrative that takes proper account of developing country interests.

*L'économie numérique est une réalité incontournable, tout comme l'industrialisation était inévitable suivant l'invention des moyens d'intégrer la vapeur et ensuite les combustibles fossiles et l'électricité dans l'industriel. Ici, il ne s'agit pas d'être pour ou contre. Un plan d'action de développement pour l'économie numérique doit être formulé sur la base d'un récit qui prend véritablement en compte les intérêts des pays en développement.*

*La economía digital es un hecho, tan inevitable como lo fue la industrialización en la innovación de procesos de fabricación que incorporaron el vapor y más adelante los combustibles fósiles y la energía eléctrica. No se trata de estar a favor o en contra. Se trata de qué tipo de economía digital deberíamos tener. Es necesario articular una agenda de desarrollo para la economía digital, basada en una narrativa que incorpore debidamente los intereses de los países en desarrollo.*

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Towards a digital industrial policy

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Digital must be considered as distinct from the IT/software and Internet sectors or phases, even as it builds over them. The term 'e-commerce' does stress this shift, of digital being about the actual economy, and not just the technology, or information and communication, parts of it. But 'e-commerce' covers only trading and market exchanges in the new context. That is what Amazon or Alibaba can be said to do. But digital economy is not just about trading, even as it transforms trading as well. It concerns very considerable changes in all aspects of all economic sectors — from transportation, hotel and tourism, to finance and logistics, to health, education, agriculture and manufacturing. The term 'e-commerce' is inadequate to capture these diverse changes.

We discussed how even the e-commerce companies like Amazon and Alibaba have gone much beyond selling goods to re-engineering the entire consumer goods economy, and controlling it digitally. Online marketplaces transcend traditional definitions of open markets by manipulating prices dynamically among buyers, and across buyers and sellers, as also the access for sellers to different buyers. Further, they penetrate the entire value chain from manufacturing to inventory management to logistics to delivery and payments. They are therefore far from just neutral platforms for buying and selling. The area that needs focus as their main business asset is sector-wide digital intelligence across the consumer goods value chain. They may more appropriately be treated as monopolistic digital intelligence service businesses rather than e-commerce. This makes an Amazon quite like a Uber, or a Monsanto setting up a digital agriculture services platform. We saw how it is not necessary for a digital intelligence business to be monopolistic in our study of narrow service segment focussed digital start-ups. We also briefly explored how public or 'commons' data infrastructures in a sector can enable a competitive play for digital businesses.

Economic value chains once used to be centred on manufacturing capabilities, and then in the last many decades intellectual property ownership has risen to the top of these value chains. Digital economy is the next stage, where economic value chains become centred on digital intelligence services in each sector. Core digital intelligence services extending across a sector have a natural monopoly characteristic. The current digital economy model is of a sector's core intelligence to be privately owned, by one or two monopolistic corporations, based on exclusive control of core sectoral data, even if it is collected mostly from 'commons' sources. Alternatively, core sectoral data and digital intelligence could be in the form of public infrastructures. Employing it, a set of digital businesses could develop further private data and digital intelligence and provide digital intelligence services in an open and competitive manner.

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Use of the term 'e-commerce', in the larger meaning that it is employed at global trade venues, and for domestic digital sector-platforms, should be discontinued. 'Digital businesses', 'digital trade', and 'digital economy' are the appropriate terms. Instead of e-commerce policies, we should be discussing and formulating digital economy and digital trade policies. Understanding digital trade can only follow from understanding digital economy. Like with earlier phases of industrialisation, developing countries must first focus on digital industrialisation, where they are severely lagging behind, before entering into commitments on global digital trade.

A digital industrial policy begins with developing enabling legal and regulatory frameworks to support easy and legally-recognised digital interactions, and protecting the interests of all actors in this regard. The importance of this is well-recognised by most countries, and necessary frameworks are either already in place or being developed.

One aspect of any digital industrial policy would be to build a supportive environment around tech and digital start-ups that have begun to emerge in most developing countries. This new sector must be recognised in its peculiarities and unique needs, and its great national importance. Meeting its capital requirements, including through venture funds, is vital. As important is to undertake ease-of-doing-business measures, especially quick and easy entry as well as exit for these businesses. Developing and supporting incubators and accelerators, in association with industry groups, will have a significant impact on shaping a local start-up ecosystem.

Effective start-up supporting policies depend on the policy-makers' understanding of the tech and digital start-up sector, and the various kinds of involved start-ups. A typology of them was offered earlier in the Indian context, which is useful for all developing countries. With cloud based SaaS industry, a further consolidation has happened in the software space with even fewer viable industry centres globally than existed for the on-premise software (coding) model. A proper assessment should therefore be made whether any particular location has comparative advantages to globally compete in this area, in a market which is highly globalised,(1) or whether such advantages can be created. In the current conditions, it may not be easy to do so for most locations.(2) But, as discussed earlier, there does exist space for cloud based companies catering to niche domestic and regional software needs and markets, especially if these markets are given some protection. This space will expand as the digital phenomenon seeps deeper into all parts of the economy and society.

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Meanwhile, even as cloud based solutions are becoming the mainstay, considerable on-premise IT/ software related work, outsourced from abroad and also aimed at the domestic economy, is still required. There continues to be business opportunity in this area for many relatively established as well as emerging software centre across the developing world, and for smaller companies and new entrepreneurship.

The other kind of start-ups, that we typified as digital start-ups, need special attention and new policy orientations. This is because they have a unique characteristic of local-ness of their key resource i.e. data, as discussed earlier. But they still need to compete with global businesses, with huge financial muscle, that are entering every country's digital space. They also need to be protected from being sucked into monopolistic platform/ ecosystem owning businesses, on unfair terms — for them, and for the larger economy. Public management of some digital/data infrastructures can provide significant support to domestic digital industry. Some such possibilities will be mentioned presently.

Digital transformation has come at a good time for many developing countries experiencing a big surge in the number of educated and aspiring youth, seeking to break away from shackles of under- development, for themselves and their societies. The current digital ferment can trigger new entrepreneurial energies and cultures, helping shape a new phase in economic and social development. Entrepreneurship is as much cultural, a matter of a certain kind of individual and collective spirit and behaviour, as its conditions are institutional. Both these aspects need to be promoted simultaneously by appropriate strategies and policies. A lot of digital innovation is currently being tried out in almost all sectors in India (among other countries), and the landscape here is useful to study and learn from for other developing countries.

But the innovation and start-up discourse needs to be carefully moderated. While innovation is important, much late industrialisation in most countries has always involved just copying successful business models and technologies from outside, and applying them to the local contexts. This holds true for digital industrialisation as well. Not every start-up needs to set out to become the next global unicorn. It is important both to manage expectations, and keep the focus considerably domestic (or to regional markets). It may be noted that even with relatively favourable conditions, there is hardly any traditional-sectors-oriented digital start-up in India that has made a prominent global mark.

As traditional sectors go digital, much of early innovation in technology and digital business models has already taken place in the US and elsewhere. A major part of the digital

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challenge is to adapt these to local conditions. In this regard, some established domestic traditional businesses can take a lead on digital efforts in their respective areas.<sup>(3)</sup> As we saw, EU is focussing on such an 'insider model'. It is also worth looking at by developing countries.

Traditional businesses have the advantage of sectoral expertise. They can also come up with the needed funds (beyond venture capital), willing to take some amount of risk within the sectors that they understand and have a foothold in. Such alternative sources of finance need to be explored because venture capital is scarce in developing countries. There is the problem however that digital seeks to disrupt and transform existing business models which is not easy to do from within. To meet the requirements of innovation and 'disruption', it may be useful to get start-ups to partner with traditional businesses, especially involving young leaders from the latter. Banks and health companies in India have been developing partnerships respectively with fin-tech and health-tech start-ups. Special strategies and initiatives need to be devised in this regard.

Governments can provide incentives to people and businesses to undertake a digital makeover, and also nudge them in other ways. The Indian government has taken a lot of very useful, and far-reaching, steps in this direction. However, individual and social behaviour, as well as every social/ economic system, has considerable inertia. Any large-scale change carries a cost, especially if done quickly. As is with any other economic and social change, interests of different people, groups and businesses may be affected differently in any digital makeover. Digitalisation tends to favour the formal sector over the informal sector, and where there exist competitive overlaps between the two it can be of considerable detriment to the latter. It is therefore advisable not to take any blunt social-engineering approach in this respect, and chart out the way forward carefully. Pilots and phased roll-outs are useful methods, although the appropriate way of implementation would depend on the context. All the involved trade-offs should be carefully evaluated, especially the impact on weaker sections of society.

As industrial development centrally required public investments in infrastructure, a digital industrialisation policy must also focus on building public digital and data infrastructures. This is the single most important, and yet neglected, area for governments to urgently address. It goes beyond connectivity/access, and the IT/software layers, that are often discussed. These pre-digital infrastructures remain important; digital cannot exist without them. But, whichever stage a country may be in terms of these pre-digital infrastructures, it needs to concurrently begin developing digital and data infrastructures as well. Taking a

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relaxed sequential approach could result in a debilitating exclusion from key digital economy/society developments.

Being successful in developing digital/data infrastructure may be less difficult for governments than generally thought. The barriers are more of conceptual understanding and political will than physical and resources related. Unlike connectivity/access infrastructure which is a physical layer, and thus takes considerable resources and time to universalise, digital is a soft layer and can be developed much more quickly, and relatively cheaper. And unlike the IT/software layer, where the offerings of global digital corporations may be difficult to beat or replace,(4) data infrastructures have a very strong local character, and governments have traditional competence and advantage in the area of large-scale data systems. This would have become evident from our discussions on how the Indian government is taking path-breaking steps in this area.

As discussed, the public sector must explore its role in three kinds of data infrastructures; 1) horizontal, digital transactions enabling, 2) personal data architectures, that are safe while providing the best social and economic value for the individual and the society, and 3) core sectoral data for different sectors (here may also be included important society-wide data sets).

Appropriate public digital and data infrastructures can ensure a robust, competitive and inclusive digital economy, that supports new and diverse digital business models. It also enables easy access to social and economic data required to meet various public interests objectives, like of policy making and governance. It can also provide leverage for governments to effectively regulate digital businesses. Apart from India, we saw that some initiatives and policy frameworks in the EU provide good lessons in this regard.

Promising new thinking is emerging in the EU regarding appropriate regulation for data, digital, and platform businesses. Data regulation is one of the most important regulatory issues right now. Developing countries need to understand both privacy rights and economic value/ownership aspects of data, and their interplay. Digital platforms that dominate and shape complete sectors urgently require new regulatory approaches. They increasingly constitute the all-powerful intelligence infrastructure of every sector. From economic, social and security/strategic/political points of view, digital sector-platforms represent extremely critical infrastructures. All these standpoints should inform their regulation.

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An important way to support domestic digital industry is through government procurement. Alibaba's e-commerce platform relied considerably in the initial stages on government purchases.(5) Where needed, governments may themselves have to get into developing some digital services, possibly in partnership with domestic industry. We saw the Indian government set up the rather successful e- agriculture marketing platform.

Unlike it was for the IT/software industry, technical skills by themselves are not sufficient or very useful in the digital phase.(6) Technical, business and other educational processes need to focus on understanding the digital phenomenon, and development of appropriate digital business, social, and policy skills. Chinese governments and its academic institutions have made a quick and extremely remarkable transition to centrally promoting digital knowledge and skills. Some of the world's cutting-edge work in the digital area today comes from China. A lot of such effort involves public sector partnerships with Chinese digital corporations.(7) This area requires urgent public investments in all developing countries. It is important to see business, social and policy skills in the digital area as quite different from the relevant technical skills, and all should be promoted.

Digital policy and programmatic requirements are so new, intense and cross-sectoral that considerable institutional change will be required within governments. It is not adequate for IT ministries to keep dealing with this sector in a technology-centric manner. On the other hand, commerce and industry ministries remain too focussed on industrial age thinking, and normally do not possess enough digital knowledge and orientation. There is a need to create a new ministry or department for 'digital economy' — preferably for 'digital society', with 'digital economy' as a specialisation within in. It is possible for IT ministries to evolve in this direction, but the thinking, orientation and expertise must undergo considerable change. As digital economy represents the application of digital to all sectors and industries, including manufacturing (the phenomenon of "Industry 4.0" and "Internet plus"), commerce and industry promotion ministries too must make a conscious transition to a new skill set. IT and industry ministries need to work together on developing digital industrial policies.

As an urgent starting point, developing country policy-makers need to begin obtaining appropriate knowledge and policy perspectives in this area. They cannot remain dependent on global venues where knowledge seems to be determined by Northern interests. This is even more so in crucial emerging areas like digital economy where economic models and global comparative advantages are still being formed and entrenched.

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Unfortunately, a singular narrative on digital economy has been established, and depending on whether one subscribes to it or not one is taken to be either for a digital economy or not. Digital economy is a given, as much as industrialisation was inevitable on invention of means of incorporating steam and later fossil fuel and electric power into manufacturing. (8) It is not a matter of being for or against it. It is about what kind of digital economy we should have. And, exploring the different possible pathways, along with mapping differential interests that are involved. 'Development agendas' in trade and intellectual property areas were about differential contexts and interests of developing countries vis a vis those of developed ones. A development agenda for digital economy needs similarly to be articulated, based on an alternative narrative that takes proper account of developing country interests.

It is not easy for individual developing countries to build and maintain the required knowledge competence in this complex and fast moving area. Institutions of South-South cooperation in economic areas, like UNCTAD and the South Centre, should therefore step in to meet their knowledge and policy needs.

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- (1) It has structural features that make it most suitable to be a single global market.
  - (2) As discussed earlier, a few centres in India have developing such a global advantage, but it is not easy to replicate it. Even within India it is highly concentrated in 2-3 centres.
  - (3) Ashok Leyland, a goods transport company in India, is building a digital platform for end-to-end needs of goods transport sector, see Pankaj Maru. (September 2017). 'How Ashok Leyland built its digital marketplace to create new revenue streams', ETCIO.com. Retrieved from <https://cio.economicstimes.indiatimes.com/news/corporate-news/how-ashok-leyland-built-its-digital-marketplace-to-create-new-revenue-streams/60356777>
  - (4) Many national efforts to develop software like operating software (in India for instance), and applications like search engine (in the EU), have not been very successful.
  - (5) Paul Carsten and John Ruwitch (June 2015). 'Still an underdog, but China government deals help Alibaba's cloud ambitions', Reuters. Retrieved from <https://www.reuters.com/article/us-alibaba-cloud/still-an-underdog-but-china-government-deals-help-alibabas-cloud-ambitions-idUSKBN0OY2TC20150619>
  - (6) It is such basic technical skills, available in large quantities, that first established India in the global software market.
  - (7) Dave Gershgorn. (February 2017). 'China is funding Baidu to take on the US in deep-learning research', Quartz. Retrieved from <https://qz.com/916738/china-is-funding-baidu-to->
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[take-on-the-united-states-in-deep-learning-research/](#)

(8) If industrialisation was about disembodiment of physical power from human and animals to machines, digital revolution is about disembodiment of intelligence from humans and human systems to machines.

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***This piece is taken from Part 5 (pp. 68-75) of the document “Digital Industrialisation in Developing Countries — A Review of the Business and Policy Landscape” by Parminder Jeet Singh and IT for Change, available from***

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