

# Digital Industrialisation in Developing Countries - A Review of the Business and Policy Landscape

## Executive Summary

(As accompanying the full paper at <https://tinyurl.com/digi-dev-countries> )

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Digitalisation can be compared to industrialisation in what would be its eventual impact on economic and social institutions. As industrialisation placed machine power at the centre of the economy, digitalisation makes digital intelligence its new fulcrum. The factory as the site of mechanised production was the central economic institution of the industrial age. For digital age, it is sectoral platforms that re-organise entire economic activities in any sector based on digital intelligence arising from data. E-commerce is a very superficial way to designate this phenomenon. Digital economy is defined by digital intelligence services, especially as they manifest in the operation of sector-wide platforms.

Tech start-ups represent a new wave of entrepreneurship, which, if appropriately harnessed, can usher in a highly efficient digital economy, spiking economic growth. Start-ups however need to be supported by policies that address structural issues like availability of capital, building of appropriate technical and business skills, regulatory measures against monopolies and other anti-competitive behaviours, technology regulation like interoperability standards, and development of public digital infrastructures. Among the latter, public data infrastructures are most important.

Digital business must be clearly distinguished from the IT and software industry. IT-based economic phenomenon has unfolded in three distinct phases, represented respectively by IT/software, Internet and digital industries. Among the new breed of tech start-ups, a distinction should be made between those providing core technical services, now-a-days mostly in the form of software as a service (SaaS), and those that digitally transform specific sectoral services, from shopping and transportation to education, health and agriculture. These latter kinds alone are properly digital

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start-ups. Their business model consists in providing digital intelligence services, based on the data that they collect.

There are two kinds of digital businesses. One that is focussed on a narrow service segment. These normally exist in an open competitive field, and are highly innovative. Digital innovation is their competitive edge. The other kind are those aiming to own the digital platform or marketplace of a whole sector. They are monopolistic by their very nature. Their business model is to capture the data and digital intelligence of a whole sector for exclusive private use. For sustaining their monopoly, such businesses routinely suppress (and/or co-opt) innovations that can give them competition.

As things currently stand, software and Internet application layers of the digital economic structure may largely be fine to be serviced by private companies working in a single global market. All economic and other social activities today require the support of these layers, and it is not easy for most countries to develop high quality software and Internet applications domestically. Global software and Internet companies develop their products for the North and simply extend them to Southern markets without much change. In doing so they incur very low marginal costs. Software and Internet markets are therefore working well globally without requiring any new trade agreements. This also applies to IT related global value chains in which some developing countries have significant stakes.

The digital business layer with its accent on data however is fundamentally different. Unlike software templates, data is essentially local. More local and specific it is, the better. Which is why personal data is most valuable. The central element in digital businesses therefore is not technology services and flows (which do provide their infrastructure). It is who has data, and who owns data? Who can derive the best value from it in the form of digital intelligence? Who can best apply such digital intelligence to real life contexts, developing a business model around it? Digital businesses collect most of the involved data from sources outside their realms of ownership. Can they be considered to own such data, and have an exclusive right to the economic value arising from it?

The key issue in digital economy is data rights, and the associated issues of privacy, data security, data ownership, data use and data flows. In seeking a free remit over any data that they can lay their hands upon, and 'free global flow of data', global digital corporations implicitly assert their rights over people's individual and social data. Do people need to make a formal counter-claim of their

individual and collective rights over their data — both the right of protection against its misuse and the right to its economic and social value?

Corporations collect most digital data from sources that can be considered as ‘commons’ (personal data can also be admitted to such a framework). Similar to their role regarding natural resources, governments can potentially act as trustees of such general data as a social and national resource. Governments have traditional competence in managing large-scale society-wide data. Public data infrastructures can be as vital to a robust and equitable digital economy as various kinds of public infrastructures were to industrialisation.

India is taking some promising initial steps to develop public data infrastructures that are useful to study. The EU too has some policies and programs in this regard.

The required public data infrastructures can be put in three categories. One is the horizontal kind that enables general digital transactions. Second, are personal data architectures that protect privacy but still allow obtaining useful economic and social value from such data. Third, are core sectoral data-bases containing key data of a sector arising from diverse sources. Such data-bases provide digital intelligence for organising economic activity in that sector. Instead of one or two corporate-owned sector-platforms monopolising such data, it can be made available as a public infrastructure to a large variety of digital businesses in that sector.

The US currently dominates the global digital economy, with China hot on its heels. These are the world’s only two successful models of digital economy. US government’s digital economy strategy is centred on global domination by its digital corporations. For this purpose, it seeks free and unregulated global flow of data. To stay consistent with its global *laissez-faire* approach, it even pussyfoots considerations of domestic digital regulation. Against this big business centric US approach is the Chinese model of state directed capitalism, whose innovative adaptations to the digital context have been extra-ordinarily successful.

A third alternative model may be becoming discernible in some developments in India and the EU. It gives a much greater role to the public sector than the US model does, but in a rule-based manner, unlike in China. This may be called as a mixed economy approach to digitalisation. Here, the public sector has an important role to build the needed digital and data infrastructures, support efficient

and open data markets, and undertake necessary regulation of digital businesses, especially those with monopolistic tendencies, or of a critical importance to the economy and the society.

Developing countries must urgently begin shaping digital industrial policies based on this mixed economy approach. If industrialisation was not possible in developing countries without a considerable role of the public sector, digital industrialisation also requires it. This mental shift is most important to be made, in the face of the globally dominant digital economy model that confines state's role to making e-transactions enabling laws and ensuring security, apart from promoting the private sector.

A sound digital industrial policy will combine at least five elements; (1) providing enabling legal and regulatory frameworks, including for easy and secure e-transactions, (2) supporting a start-up ecology and other domestic digital businesses, (3) building public digital and data infrastructures, (4) shaping regulatory frameworks for digital monopolies that are set to control whole sectors, and, (5) as required, developing public/community digital platforms in some key areas.

At global trade venues, developing countries must resist the global digital economy model that, for instance, is represented in the e-commerce chapter of the Trans Pacific Partnership trade agreement. It will decimate their digital industrialisation options, by enabling global digital corporations from the two leading digital countries to completely dominate all sectors of their economy, including the traditional, non-IT, sectors.

E-commerce covers very different kinds of goods and services, each requiring different treatment in global trade discussions. E-commerce of physical goods is very different from that of fully digital goods and services. Of the latter there are at least four further categories.

Digital cultural goods should be subject to special treatment as called for in the relevant UNESCO treaty. IT enabled Services (ITeS) are to be addressed under trade in services frameworks, corresponding to the specific service sector that is implicated, like education, health, finance, etc. Software/IT services exist in a well-functioning global market, demonstrating no need for new trade agreements.

Data flows involved in ITeS and software services normally do not have issues about ownership of the data. The main public interest concern here is of access to data by authorities of the country of

origin, as and when required, for privacy protection, and other kinds of regulation and law enforcement. What is needed in such cases are not trade deals but data protection and security agreements between countries.

The mainstay of the digital economy, on the other hand, are digital businesses based primarily on data collected from outside their business systems — from personal, social, artefactual or natural sources. It is the digital intelligence obtained from such ‘outside’ data that is employed to control the larger economic ecosystem. Data collectors, however, do not own these data sources, and therefore their complete ownership over data obtained from them, and its unregulated use, is questionable. The issue becomes even more problematic and complex when such data is taken out of national borders, with no clarity about the nature of its further use.

It is such data flows pertaining to global digital businesses that is the main concern of the US led camp promoting global e-commerce deals, including at the WTO. Their great importance stems from the fact that digital businesses — involving digital intelligence services — sit at the top of new global value chains.

The nature of ownership of such digital data, and personal and collective rights over it, must first be discussed and clarified, before frameworks for ‘free flow of data’ can be negotiated. ‘Data ownership’ and ‘data flows’ are closely related subjects and must be discussed together. Till these basic political economy related conceptual clarifications can be arrived at, developing countries must avoid entering into negotiations for e-commerce or digital trade agreements.