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Note to the reader

1. This slide doc attempts to provide a comprehensive response to the two questions posted for the final exam
2. The accompanying Addendum Section
 1. Has point of views on two aspects that supplement the response to question 1 & 2
 - I. Economic view vs Perception of the society
 - II. China's response - a game theory perspective
 2. Has a slide that demonstrates the trade-off matrix for the alternatives that are articulated in response to question 1

A note on methodology

General:

1. A secondary research – desk research was done to gather data and build arguments for the responses. The reference have been cited accordingly.

Specific to question 1:

Assumption: The answer does not contemplate whether the ban was necessary. The ban is taken as an event and a forward-looking analysis of this event is done which is followed by the recommendation.

1. A short primary research (dip-stick) was carried to assess:
 - i. The perception of Chinese app ban on a segment of population
 - ii. Usage of the banned apps
 - iii. Consumption of content from these apps
- 2 Social Impact Matrix, Stakeholder analysis, Risk analysis and ethical analysis frameworks were used to gather insights to respond to this question
3. Multiple criteria method with approximation - Analytic Hierarchy Process (*Saaty, 1980*) used as the framework for evaluating alternatives (strategic options)
4. Bardach's eight fold path was used for policy analysis and recommendation (*Bardach, 2009*)

Specific to question 2:

A more holistic view is taken to respond to the question 2. Among the various alternatives (actions) possible the response in this slide doc focused on one action that will have trickle down effects on policy making on technology/digital that can be used to not only gain leverage over China in the long run but also position India to reap the benefits of the digital economy.

In this response “Digital” is used in the context of digitization and digitalization. In general, a broad definition of digital is considered.

Competition, Innovation, Rule of law, **Livelihoods**, Fun, Freedom of expression, Business certainty, **Incentive** to improve **skills**, Level playing field, Personal data **security**, Liability of the firm, Revenue from Complimentary goods, Action, Marketing spend on the apps, **Hope**, International perception

Impact of the Chinese app(s) ban on Indian society?

Executive Summary

The app ban is the opportunity in disguise to reinvigorate, reform & reimagine India's march towards the \$5trillion economy and its aim of becoming a true version of a Digital India.



What should GOI be doing to address the impact of app ban?

The problem India has with the app ban, *in about 200 words*

While most of the sections of our society has welcomed the ban on Chinese apps, questions have been raised on the due process followed as per Section 69A of the IT Act. In the current geo-political context, the larger question of constitutionality may take a back seat. But, the consequence of the ban is already felt by certain section of society in lost livelihoods, job losses and loss in productivity etc.. The signalling effect of this move is much stronger as a perception of arbitrariness can be associated with the move by investors and MNC's who increasingly are wary of state overreach in the markets. Moreover, the stalled reforms of PDPB and other IT acts also add to the notion of high entry barriers in the Indian market because of increased regulatory uncertainties. All in all, the imperative for the government is not only to address the unintended consequences of the app ban but also provide sufficient confidence to the markets & society that fairness and openness remain the cornerstone of the Indian economy.

X

The 3cube strategy constitutes a set of timebound actions for ensuring protection of civil liberties & social equity while reaping the economic benefits of digital technologies and applications.

The GOI not only has to manage the short-term impact of the app ban but also align its interventions to achieve the stated objective of Digital India and \$5 trillion economy. The 9 actions articulated are based on

1. Anticipating consequences considering equilibrium effects
2. Completing ongoing structural reforms to enable sustainable & responsible growth of tech & tech enabled sector
3. Seizing the opportunity to create a comprehensive Digital Policy Framework

Recommendation

Recommendation is to take a comprehensive approach with 3cube strategy

$$3^3 = 3 \times 3 \times 3$$

Principles Time horizons Actions

3³ (3cube) strategy is the recommended policy approach that Government of India must take to exploit the opportunities, mitigate the risks and ameliorate the unintended consequences of the app ban.

This strategy is based on addressing the key ethical & policy issues that were present before the app ban and have come to the forefront with the app ban. The 9 actions articulated are based on

1. Anticipating consequences considering equilibrium effects
2. Completing ongoing structural reforms to enable sustainable & responsible growth of tech sector & tech enabled sectors.
3. Seizing the opportunity to create a comprehensive Digital Policy Framework

Reinvigorating:

Strong Signal to the International community and domestic constituencies that 1) India is open for business, 2) the law of the land prevails, and 3) India will protect its citizens & sovereignty.

Now : In two weeks

1. Make public the due process followed for banning the 59 apps in accordance to Section 69 A, even though the Right to Information (RTI) queries are not applicable to the law. Consider this step as a signal to the market, to allay fears about state coercion of foreign players. Also allow judicial recourse by the affected parties (*Shreya Singhal vs U.O.I, 2015*)
2. Incentivize investments in Indian startup-up ecosystem. E.g. e.g. Increase the share of FDI from 26 per cent in digital sectors.
3. Formulate a response framework in the event of china's retaliation to the ban in the cyber domain (*Allen-Ebrahimian, B. (2020, March 25)* or the real world - e.g. China's claim on violating WTO rules

Reforming:

Increase incentives to invest & set up business in India - subsidies, FDI's, new business loan rate etc.

Short term : Now to Next 3 months

1. Address concerns around privacy and sweeping powers in the personal data protection bill through public & expert consultations.
2. Establish an independent governance body that works with industry, government, civil society and user groups to ensure protection of civil liberties & social equity while reaping the benefits of the new technology/applications
3. Establish a tech Watchdog that focuses on the "development of technology pathways" taken by different countries and submits comprehensive risk assessment report every quarter. This watchdog can partner with other institutes of countries to increase their say in international matters around digital /technology policy

Reimagining:

Reform archaic IT act and building new institutional capacity for an increasingly digital world

Medium term : Now to Next 1 year

1. Kickstart the conceptualization of a Comprehensive Digital Policy Framework for India's transformation: Set up a well represented committee of experts, civil society, industry bodies e.g. NASSCOM, AIBA, key government stakeholders – MHA, MEA, Dept. of Communication etc.
2. Align the 3 pending reforms viz. Ppersonal Data Protection Bill (PDPB), the e-commerce policy, and the Information Technology Act Amendments in the larger context of digital India & \$5 trillion economy.
3. Establish a Tribunal to fast track technology related disputes



Other Alternatives considered are



Let things be: The executive tries to implement the ban and addresses the concerns of the aggrieved citizens and the companies

Issues with this alternative: 1. Low state capacity – monitoring of the ban, technical expertise etc. to understand defeat mechanisms/devices – e.g. VPN, side loading , 2) Rent seeking by the executive, 3) Investor community will remain vary of ad-hoc intervention by the state.



Change regulations that reflects governments stand on data protection:

Issues with this alternative: 1) The regulatory reforms are often sweeping & tend to take long time and often do not go through required deliberation e.g. PDPB, 2) lack of expertise within the state to create comprehensive tech policy, 3) Negative perception in the international community because of rhetoric from China on trade violations and legality of ban.



Special subsidies for app makers producing the same good: Introduce schemes to incentivise app makers to create me-too apps or apps with that deliver the same value proposition

Issues with this alternative: 1) Supply side takes time to build, 2) No network effects exists for a new player to enter the market – High fixed cost to build a new app is risky considering substitutes exists, 3) Regulatory risk - the regulation around data privacy is not clear.

Rational for 3³ (3cube) Strategy

The GOI not only has to manage the short-term impact of the app ban but also must consider fundamental reforms to achieve its stated objective of Digital India and \$5 trillion economy. The tech sector will be a key lever in this transformation. Moreover, this transformation while considering the demands of Individual at the margins, Indian society, markets, state capacity should ensure protection of civil liberties & social equity and must also consider the geo-politics and the rapid digitalization of our world. The 3cube strategy has a three-prong approach as a basis for articulating the [9 actions](#). These approaches are

1) Manage the consequences of app ban while considering general equilibrium effects, 2) address the much-needed reforms that were used as technical reasons to justify the ban e.g. PDPB, & 3) most importantly use the opportunity to kick start deliberation on compressive Digital Policy Framework for India. This policy is in the Overton window.

The GOI has to confront the following important issues as a result of this ban

1. Infringement on Right to life & personal liberty as the ban has particularly caused greater distress at the margins – lost revenues, jobs, social capital etc. And in general the loss of personal efficiency that citizens had gained by using these apps
2. Not meeting the stated objective of the ban due to limited state capacity in tracking novel ways employed by the citizens to access the apps – sideloading, VPN etc. or reversal of the ban as the court finds that the “Press Release is out of step with the provisions of Art 69A of the IT Act and The Blocking Rules” (*India-China Series: Part IV: The Constitutionality and Legality of the ban on Chinese Apps* - (sshobhit266, 2020)
3. FDI backlash as there are significant investment by Chinese companies (albeit through 3rd party countries - (*Krishnan, 2020*). The ongoing economic distress and market interference by the state could results in other Investors fleeing the market as well.
4. Signalling to domestic constituencies & posturing to international communities after the Galwan valley clash and the ongoing China’s continued expansionist policy that is now at the forefront of popular discourse
5. Uncertainty among entrepreneurs and MNCs as the ban can be seen as excessive state intervention in technology sector.
6. The reforms viz . PDPB, ecommerce policy, IT amendments are stuck in limbo and therefore could be construed as regulatory uncertainty there by viewed as an entry barrier to the tech sector in India.

Details

Individual perspective

Market perspective

Society perspective

Government perspective

Details

Israil Ansari, 19, from UP was doing odd jobs till he started creating content in TikTok and became a full time influencer. ...He was making 20,000 rupees for each appearance, which was more than his monthly salary had been. "They paid for everything: my travel, my stay, my food. I only had to satisfy their demands." That part he found easy: "I exchange *salaam-duas* [greetings] with the men, dance for the ladies, and I am done." - *This Indian TikTok star wants you to know his name*, - *The Economist (POONAM, 2019)*



Individuals, especially ones at the margins are adversely impacted by the ban on Chinese apps

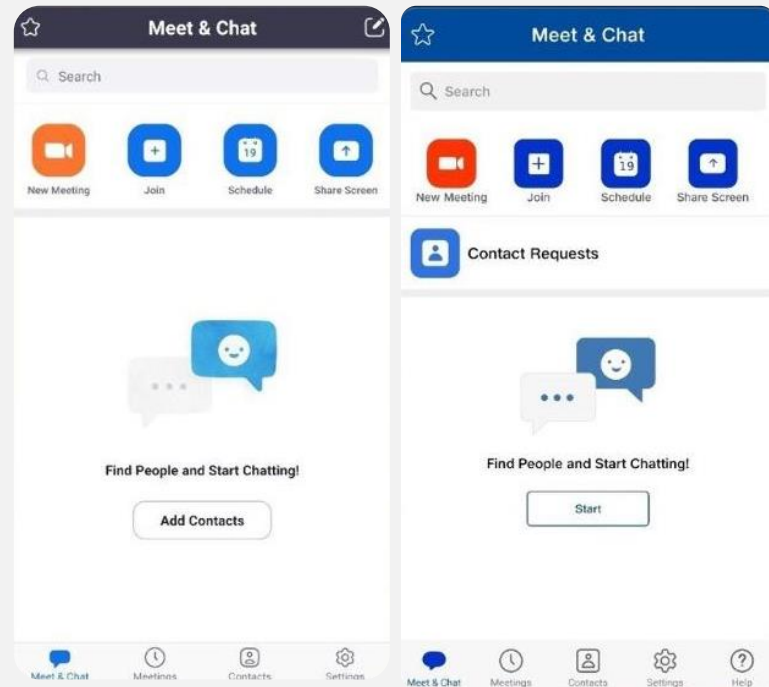
69.3% of the respondents have enjoyed TikTok videos though 68.3% of the respondents have not used TikTok app - *Survey: Perspective on app ban, Aug' 20*

Key issues for an Individual due to app ban	Anticipated behavior & responses	Possible course of action by the state
Lost livelihoods at the margins 1) Influencers - due to loss of social capital e.g. with TikTok, 2) Traders/Students - access to markets information and relations in China e.g. with Wechat , 3) Marketers who were focused on creating advertisements on these apps	1) Switch to substitute apps; 2) Side- loading or using VPNs of apps (<i>After the Indian Ban on 59 Chinese Apps, What Comes Next? - (Waghre, 2020)</i>)	1) Make public the security concerns around the banned apps and publish a FAQ's/advertisements in local language (newspaper, radios etc.) of the risks related to apps and mechanisms (best practices) to safeguard data.
Limiting a continuous expansion of extrinsic & intrinsic values. E.g. improvement of social status, fame and spreading of sheer joy with creative contents, making new friends globally due to reduced technological & cultural barriers with the TikTok platform	1) Create content in alternate platforms like Dubsmash or Youtube.; 2) Seek help from "informed users" on working with alternatives thereby increasing possibility of rent seeking (by custodian of info) by some	2) Publish a periodic weather report for internet security alerts : Liaise with civil society, advocacy groups, local bodies, start-ups, corporates etc. to propagate safe practices (<i>MOBILE DEVICE SECURITY - https://staysafeonline.org/</i>)
Accessibility to substitutes (for the less informed and tech savvy)- E.g. Scanning shops - at the rural areas, for women at certain points when it is not perceived to be safe going out alone. (<i>SAFETY TRENDS AND REPORTING OF CRIME, 2017</i>)	1) Do nothing ; 2) Pay to use substitutes; 3) Seek help from "informed users" on working with alternatives thereby increasing possibility of rent seeking (by custodian of info) by some	
Forced move to lesser value good (apps in this case). Apps that have high cost to adopt e.g. language. The increased adoption of the ban apps by users validates the point that these apps were better (TikTok Revenue and Usage Statistics (2020) (IQBAL, 2020), CamScanner – 100Mn users (<i>Ahaskar, 2020</i>))	1) Wait-it-out for better alternatives that provide equal value	
Reduced personal efficiency due to learning curve associated with switching to substitutes. E.g. ShareIt, Xender, CamScanner, TikTok etc.	1) Learn by doing – self learning; Seek help from "informed users" on alternatives thereby increasing possibility of rent seeking (by custodian of info) by some	



Markets, on the one hand have an opportunity to address the lacuna as a result of ban but on the other hand the risk of state intervention is visibly real

36.6% respondents have used more than 3 of the 59 banned Chinese apps. *CamScanner, SHAREit & Xender were mentioned as useful apps - Survey: Perspective on app ban, Aug' 20*



Coke or Pepsi?
...of the app marketplace in India

Key issues for Markets due to app ban

Coercion by the state in the tech sector. A precedent is set. Distortion of markets as retaliatory measure is seen as an effective move for geo-political misadventures of an aggressor, by the host state.

Clarity on reforms remains elusive: Obscure data protection regulations (PDPB), the e-commerce policy, and the Information Technology Act Amendments are stuck in a limbo.

Investor confidence will take a hit as experts predict reduced confidence among the Chinese investors to invest in India (*“Chinese app ban to create funding hurdle for Indian unicorns and soonicorns.” The impact will be in other sectors as well. - (Abrar, 2020)*). This sentiment will be carried to other investors & sectors – General equilibrium effects.

Entry barriers still exists for new entrants: Existing substitutes have advantage as the product is already in the marketplace. Therefore, incremental feature development to match the features of the banned apps would have less fixed cost compared to fixed costs for building a new app by a new player.

Real innovation takes a backseat: The ban can result in short-sightedness of firms seeking to encash on the market distortion by launching me-too apps that does not push boundaries in terms of innovation. There exists no incentive for them to be competitive & be innovate in the marketplace.

Anticipated behavior & responses

1) Cautious investments in India – capital & resources; 2) Rent seeking by the executive & politicians; 3) politically connected firms try to influence policy.

1) Opaque algorithms as there is no regulation for transparency – can result in coercion by private players; 2) No data disclosure by companies; 3) Uncertainties around data localization laws will lead to higher operation costs & firms with deep pockets can only survive.

1) Investors will move to other markets; 2) Proxy investments in Indian marketplace through a network of intermediaries and third-party countries will rise.

1) Acquisitions of small firms by bigger players leading to concertation of market power; 2) These new firms can use their existing platform and incentives users (advertisers) to join the new app with cross-subsidization; 3) Vertical integration strategies can be deployed to extract the maximum surplus by the firms.

1) Top talent moves to other sectors or abroad as the wages will stagnate and the work required will be not challenging & of lesser quality; 2) The remaining labor force will have no incentive to upgrade skills & innovate.

Possible course of action by the state

1) Quickly address existing open issues like - Angel tax issue (*“Start-ups Left Fuming As Angel Tax Makes I-T Returns Complicated” (Anupam, 2020)*)

2) Resolve stalled reform measures – the Personal Data Protection Bill (PDPB), the e-commerce policy, and the Information Technology Act Amendment

3) Reimagine FDI for digital sectors e.g. Increase the share of FDI from 26 per cent in digital sectors (which was introduced in Dec 19) - *FOREIGN DIRECT INVESTMENT (FDI)*, (IBEF, 2020)



Society will cope up with the ban in the short run but will be impacted by general equilibrium effects of the ban – loss of revenues & social capital

58.4% agree that banning Chinese apps is still a good idea though there can be unintended consequences like loss of livelihood - Survey: Perspective on app ban, Aug' 20

General Equilibrium Effects

Key issues for Society due to app ban	Anticipated behavior & responses	Possible course of action by the state
Job loss – Marketers creating advertisements for these apps & platforms, talent working for the UCWebm, Byte dance etc. (<i>IANS, Hit by India ban, Chinese app makers begin laying off local staff, 20202</i>)	1) Community support to people who have lost jobs.	
Loss of revenues due to loss of investments (<i>TikTok ban. ByteDance planning to invest \$1 bn in India, says Zhen Liu, SVP (Singh, 2019)</i>) & commercial revenues (<i>TikTok ban in India causing \$500,000 daily loss, job risks, says Bytedance, 2019</i>). General equilibrium effects - 1) Disproportionate loss of revenues for the Influencer ecosystem; 2) loss of economic growth and employment (Janitors, Chaiwails, Chatwalas etc. of the informal economy); 3) Not improving people's lives (<i>Innovation and Growth: How Business Contributes to Society - (Ahlstrom, 2010)</i>)	1) Protests by communities or specific interest groups (e.g. startup ecosystem, people who have lost jobs); 2) Protests by state governments or cities who would have benefited by the investments.	1) Address the concerns around personal data & privacy in PDB to reduce random diktats citing security & privacy concerns.
Lost social capital & means of expression for marginal communities. (<i>“Teens are using TikTok as a new way to come out to friends and family, and it shows how vital the app is becoming to Gen Z's LGBTQ community” – (LESKIN, 2019)</i>)	1) Challenge ban in courts claiming infringement of right to freedom of expression; 2) Protests from interest groups.	2. Establish a governance body that works to ensure protection of civil liberties & equity while reaping the benefits of the new applications to improve lives and livelihoods in the society.
Loss of trust in the government due to diktats	1) Use defeat mechanisms to still access the apps (apk's, VPN's etc.).	
Learning curve associated with the usage of new substitute applications	1) Switch to substitute apps; 2) Seek help from “informed users” on working with alternatives thereby increasing possibility of rent seeking (by custodian of info) by some.	



Government will have to spend its limited capacity on the unintended consequences of the app ban both locally and internationally

Only 36% of the respondents view the ban would be successful in its objective and 48.5% believe the ban will help the society- *Survey: Perspective on app ban, Aug' 20*

Topical or Strategic?



Key issues for Government due to app ban	Anticipated behavior & responses	Possible course of action by the state
Not meeting the stated objectives of the ban as the citizens find novel ways to circumvent the ban	1) Use force on citizens engaged in deviant practices to access banned apps; 2) Rent seeking by police; 3) Coercions of mobile operators or ISP providers to provide data related to citizens.	
Implementation of the ban with limited executive capacity	1) Increasing state capacity by onboarding experts to engage in a chase of digital mavericks & defeat devices/mechanism (Waghre, 2020), 2) provide discretionary powers to ISP's – ibid, 3) Train the local bodies to check compliance	1) Information campaigns of being a benevolent state with the help of co-opted media houses
Winning the perception battle of 1) India being an open-economy & 2) a strong state, in the context of ban as an unstated retaliatory response to China's transgressions in the Galwan valley, in domestic constituencies and international community	1) Information campaigns of being a benevolent state with the help of co-opted media houses; 2) make a case for the China's assertion of violating WTO rules by India's app ban; 3) Digital diplomacy – encourage large tech players to invest in India – Google \$10Bn, Facebooks investment in Jio	2) Digital diplomacy – encourage large tech players to invest in India – Google \$10Bn, Facebooks investment in Jio
Managing clamor for further retaliations against Chinese investments due to the precedent set by the app ban	1) Balance the narrative with information campaigns; 2) Re-Assess the FDI inflows to India by China or Chinese companies (Krishnan, 2020)	3) Establish a tech watchdog that provides an effective assessment of technology pathways taken by leading technology-oriented countries and the impact of that on India.
Question on the Constitutionality of app ban (<i>"India-China Series: Part IV: The Constitutionality and Legality of the ban on Chinese Apps"</i> (sshobhit266, 2020))	1) Coercing people who raise questions; 2) "Reveal more in the interests of accountability on the reasons behind the ban" <i>ibid.</i>	

Conclusion

The app ban provides an opportunity to reinvigorate, reform & reimagine India's march towards the \$5tr economy and its aim for becoming a true version of Digital India.

The 3³ (3cube) strategy articulated in this discussion document is a set of actions to address the effects of the app ban and to start a larger work on comprehensive Digital Policy Framework for India.

Favourable Climate for investments,
Ensure civil liberties,
Fun, Freedom of expression,
Social equity, Incentive to
improve skills, Level playing field,
Robust personal data
protection bill, FDI reforms, Tech
Watchdog, Joy, Structural reforms,
Comprehensive Digital Policy

How can India's interest be maximised in the current scenario of a ban on Chinese apps amidst the larger geo-political context and the goals that India has set for itself to achieve?

Domestic reforms: The foundation that ensures protection of civil liberties & social equity while reaping the benefits of digitalization of the economy & society

1. Complete ongoing structural reforms in the tech sector to fruition
2. Establish an independent governance body that works with industry, government, civil society and user groups to ensure protection of civil liberties & social equity while reaping the benefits of the new technology/applications
3. Establish a well represented committee and Kickstart deliberations on a comprehensive Digital Policy Framework for India.

Digital diplomacy: Reforms for India's engagement with the international community in the context of digital economy

1. Create a favourable Climate for technology centric business: Undertake structural (taxation) & FDI reforms (e.g. Increase the share of FDI from 26 per cent in digital sectors) to incentivise entrepreneurship and favour investments .
2. Establish a tech watchdog that shapes the narrative of digital policy keeping India's interest at the centre.

End of Question 1



A case for a comprehensive Digital
Policy Framework for India

Digitalization is pervasive and far more complex due to its inherent connectedness & compounding nature of the multiplicative effects of various technologies (5G, Big data, Quantum computing, Blockchain etc.), and the cross sectoral impact that is already blurring many boundaries. A myopic view of formulating policies be it in manufacturing, tech sector or education can only take us so far. The opportunity that India has is to define a conceptual apparatus that ties together the various policies that we have now, are being discussed and will have in the future.

The idea that is ripe, and in the Overton Window of the country, in about 200 words

There are many short-term policy measures being executed and discussed in the popular discourse which have come to the forefront after the Galwan Valley clash. The measures range from banning more Chinese apps, to cancelling Chinese companies' sponsorship of IPL, to curtailing or reassessment of the relationship with Confucius Institute in the country. The complimentary move from US in banning TikTok is also seen as a justification of India's move by many.

However, this spurt in activities should not be seen with a myopic lens. These measures are to be seen in the larger context of a world riddled in the issues of various geo-politics & national politics and the world & tech economy landscape where each country is fighting for its place while watching China's accession as dominant player in the world stage.

India can take many pathways from a technology economy perspective. One Idea that it should take forward, to safeguard its long-term interest, is the idea of having a Comprehensive Digital Policy Framework. This framework will be instrumental in shaping policies that will enable India to leverage the digital revolution and become a \$5 trillion Economy and Digital India.

X

The Digital Policy Framework is the conceptual apparatus that helps policy formulation using this framework to be Sustainable, Inclusive, Equitable & Innovation-oriented for the comprehensive development of India. The four distinct aspects of the Digital Policy Framework are:

Guiding principles: Digital Policy Framework aligns to the ethos of the constitution of India.

Sectoral Strategy: The 3 category sectoral pillar strategy is aimed at exercising India's "Comparative Advantage" and reploughing immediate benefits back to the system for continuous gains.

Economic Indicators: The T shaped approach to measure economic impact of policy will provide a more holistic view for course corrections and subsequent interventions.

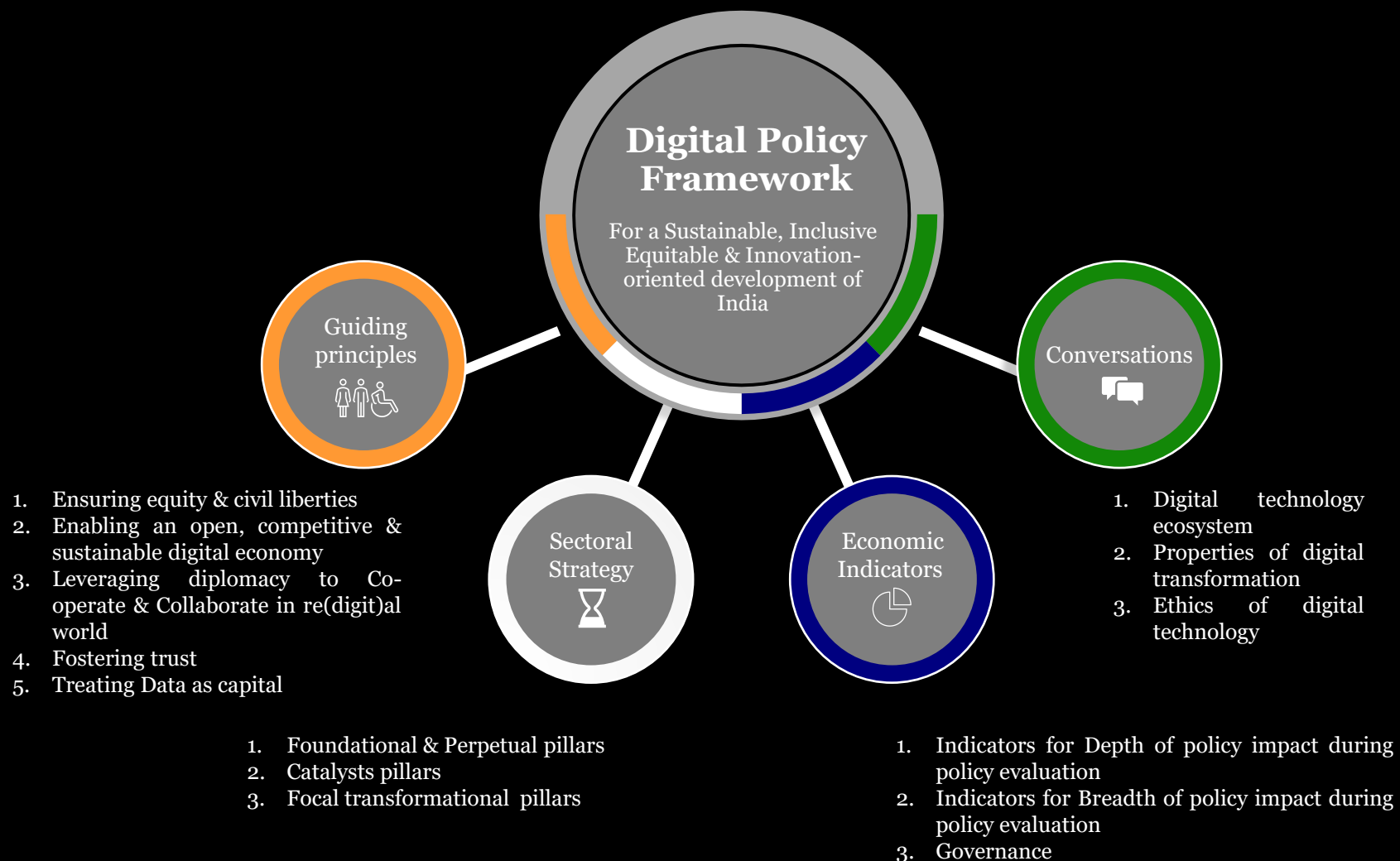
Conversations: A mandated space for dialog on any digital policy intervention within the country and with other countries based on India's global strategic priorities.

Recommendation

Digital Policy framework, to shape the polices on digital in India.

While using the comprehensive Digital Policy Framework the policy makers should appreciate the fact that neither India was born yesterday, nor “Digital” is “new shiny object” in the policy, political, social and economic realm. A fact well underscored, if one looks at the various policy discourse happenings in the country be it NEP, PDPB or ecommerce policy, e-Infrastructre, Policy on software products etc.. Therefore, while formulating digital policies it is imperative for the policy maker to be humble & consider the lay of the land, an aspect often missed when experts are parachuted into midst of ongoing dialogs. The policy maker should take a nuanced approach to navigate the political economy and geo-political landscape while forming policies that not only safeguard India’s national interest and its standing in International community but also ensures that societal goals of equity, inclusiveness and civil liberties are met while reaping the many benefits of a growth led by digitalization of India in the increasingly interconnected world. The devil is always in the detail and the proof is when Indian citizens are better off due the policy work we do today. The call is to re-adjust, to a sound footing.

The Digital Policy Framework is proposed as the conceptual apparatus which will help shape evidence based formulation of digital policies in India.



Where is India in the digital journey?...

Therefore, the need for a conceptual apparatus. - *The rational*

Individuals, society and markets are increasingly adopting new digital technologies to do better. Simultaneously, the digital technology landscape is racing ahead with virtuous cycle of innovation and exponential release of applications catering to our smallest needs. The government will increasingly have to deal with this rapid change and the overlaps (including in the policy space). A critical look at the digital policy landscape in India, brings to the forefront the fractured nature of the landscape, a sobering realization. The need for having a broader policy framework to bring everything together is immediate.

Ministry of Electronics and Information Technology

- National Policy on Electronics 2019 (NPE 2019)
- National Digital Communications Policy – 2018
- Consolidated FDI Policy – 2017
- National Manufacturing Policy - 2011
- National IPR Policy - 2016

Ministry of Finance

- ?? – *Crypto Currency ?*

Ministry of Home Affairs

- ?? – *Data Security?*

Ministry of External Affairs

- ?? - *Digital diplomacy?*

Ministry of Commerce & Industry

- ?? – *Industry 4.0 ?*

Ministry of Human-Resource-Development Education

- National Education Policy

Digitalization is pervasive and is impacting all sectors. India has to manage these blurring of boundaries in various areas & set policies that focuses on comprehensive development

A comparative view, looking at a few numbers

	2015	2016	2017	2018
India	216			253
China	1151	1197	1225	1307
Japan	5173	5209	5304	5331
Germany	4744	4862	5077	5212
USA	4268	4248	4412	

Researchers in R&D (per million people)

	2015	2016	2017	2018	2019
India	30	28.5	29.8	16.5	17.5
China	29.3	26.9	22.9	8.5	8.5
Japan	11.2	11.1	11.1	11.1	11.1
Germany	10.5	8	8	8	8
USA	5.6	5.6	5.6	5.6	4.2

Time required to start a business (days)

	2015	2016	2017	2018	2019
India	68.8	68.8	71.3	74.4	74.4
China	75.6	75.6	75.6	75.6	75.6
Japan	81.9	81.9	81.9	81.9	81.9
Germany	94.4	94.4	94.4	97.5	97.5
USA	83.8	83.8	83.8	91.3	91.3

Women Business and the Law Index (Scale 1-100) - measures how laws and regulations affect women's economic opportunity

	2015	2016	2017	2018	2019
India	8.0	7.6	7.4	9.0	
China	30.4	30.2	30.9	31.4	
Japan	18.1	17.3	17.6	17.3	17.0
Germany	17.9	18.2	15.9	15.8	16.4
USA	21.9	23.0	19.7	18.9	19.1

High-technology exports (% of manufactured exports)

Source – World bank data

Recurring themes

1. India is making progress albeit too slowly (especially compared to China)
2. The fundamental levers that have high developmental impact like higher education and women empowerment need massive boost
3. India seems to be more of a consumer in the digitalization economy

A case for state intervention does exist*

Is there a market failure?

Yes.

Information asymmetry as born digital players (platforms – amazon, Jio) & big corporates using digital tech e.g. Manufacturing firms – M&M compared to SMEs have more information than users & peers

Market control and access to technology by a few players - e.g. in telco sectors has 3 major players, online retail (amazon, flipkart) etc.

Is a Coasean solution feasible?

Yes, but need adequate policies & laws in place.

The existing ecosystem favours the powerful and well connected. Moreover, the equitable distribution of digitalization (e.g. job loss due to automation) is yet to be seen even in economies that are ahead in the digital journey.

Do traditional community solution work well?

No. Because of the existing inequalities.

The digital transformation what we are seeing today is more fundamental and often compared to the Industrial revolution that happened due to the invention of a general purpose technology - steam engine. Good faith solutions could only work in very rare instances.

Can we free-ride on state capacity outside India?

Yes.

Considerable amount of deliberations have happened in EU with GDPR, OECD members on digital policies etc. The opportunities does exist for us to learn from these deliberations.

Can some of the work regulation be pushed down to private firm?

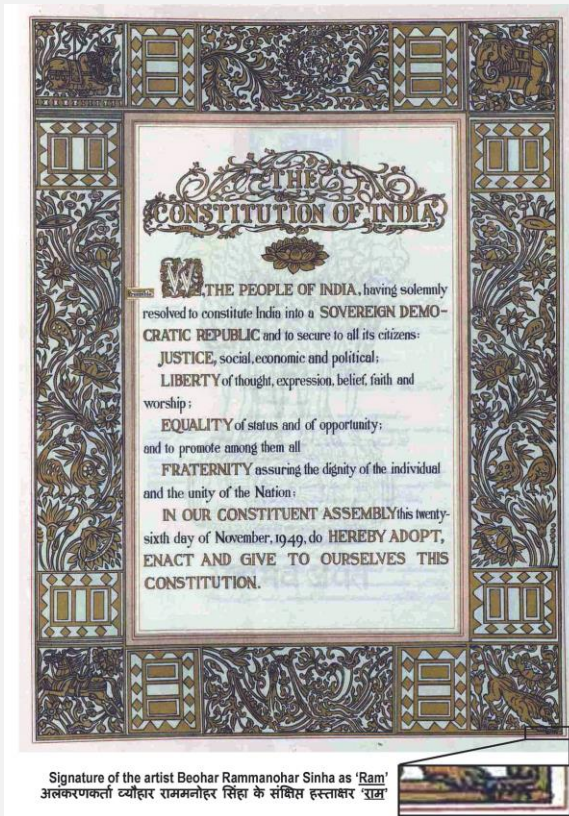
Yes. But let them know the boundaries.

All firms are impacted with digitalization and many are improvising to stay relevant. Moreover, the focus on triple bottom-line has forced firms to think responsibly. A partnership model can be a viable option in many areas. But the high risk investments and defining the rules (e.g. data protection laws) are to be led by the government.

* Reference: (Kelkar & Shah, 2019)

Details

The Digital Policy Framework aligns to the ethos of the constitution of India



The guiding principles of the Digital Policy Framework sets appropriate contours for comprehensive policy formulation

1. Ensuring equity & civil liberties

Why this principle is important?

Digitalization on the one hand has caused massive concentration of power (e.g. Google, Facebook, Jio; Code is Power (Susskind, 2018)) and on the other hand has not really contributed to an equitable growth as was envisioned. (e.g. Up to 12 mn Indian women may lose their jobs to automation by 2030: (Livemint, 2019)) ; The Pains from Trade (Banerjee & Duflo, 2019)

2. Enabling an open, competitive & sustainable digital economy

Why this principle is important?

India needs growth. The digital economy will have a lot to glean from the Mark 3 framework (Kelkar & Shah, 2019) .

3. Leveraging diplomacy to Co-operate & Collaborate in re(digit)al world

Why this principle is important?

China's expansionist policy has significant impact on the digital economy and the world order. As a largest democracy and a thriving economy with big ambitions India's standing on real & digital world has to be a top priority in any digital policy formulation.

4. Fostering trust

Why this principle is important?

The pervasiveness of digitalization will blur the boundaries of what is private and what is public. Also the human to human, human to machine, machine to human and machine to human interactions will necessitate new checks and balances for trust, by design. For instance, mandating the algorithms to be made transparent would be a significant step in fostering trust in the digital world.

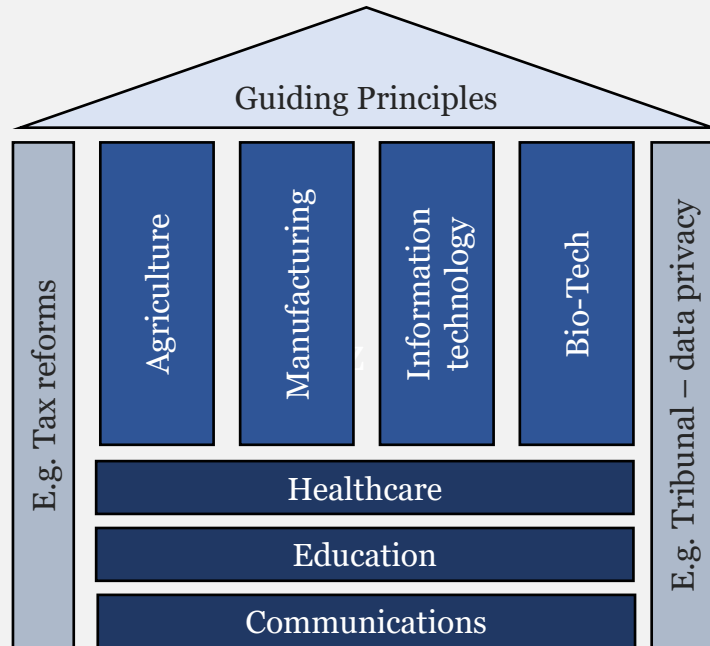
5. Treating Data as capital

Why this principle is important?

Digitalization is already creating a huge amount of data. Of course, the journey has just started. The question of who owns, protects, manages, uses data to create value etc. are policy questions that countries are grappling with. The driving principle related to data in the Digital Policy Framework is to consider it as "Capital", so that the stakeholders involved deeply consider the ramification of ethical use and abhorrent misuse of data.

Sectoral Strategy

The 3 category sectoral pillar strategy is aimed at exercising India's "Comparative Advantage" and reploughing immediate benefits back to the system for continuous gains.



3 Categories

- Foundational & Perpetual pillars
- Focal Transformational pillars
- Catalysts pillars



While the opportunity for digitalization is ubiquitous. It is important to take this journey based on India's priorities of holistic development and long term strategic interest

Foundational & Perpetual pillars

The foundational & perpetual pillars of Communications, Education and Healthcare have continuous focus and dedicated budgets for policy development and implementation.

Focal transformational pillars

The Focal transformational pillars are the short-medium term priorities on specific sectors during a particular time period. One or more pillars are swapped depending on new priorities (after 7-10 years).

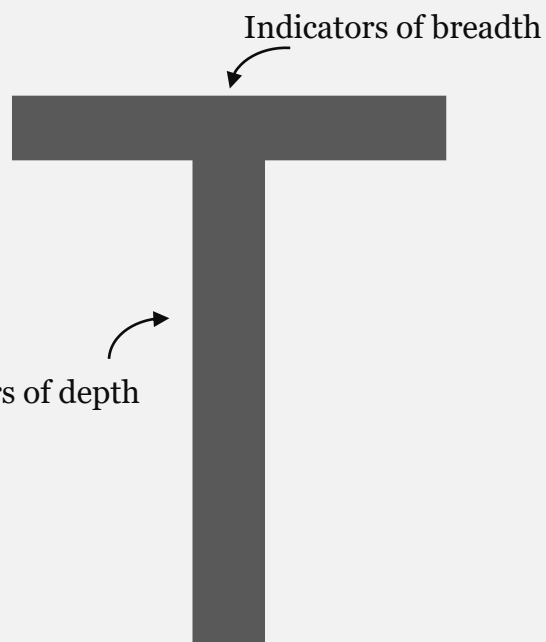
Catalysts pillars

The catalyst pillars are typically short interventions in specific areas that has a butterfly effect on the other two categories of pillars.

Guiding principles as the capstone

The [guiding principles](#) acts a capstone to hold varied activities in the different pillars together.

The T shaped approach to measure economic impact of policy will provide a more holistic view for course corrections and subsequent interventions.



The economic indicators in the digital policy realm need to have a broad based (in line with the interconnectedness of digital economy) and a narrow indicator (for the objective of the policy)

1. Indicators for Depth of policy impact during policy evaluation

Leading and lagging economic indicators that measure if the primary objective of the policy is met.

E.g. National Education policy

2. Indicators for the Breadth of policy impact during policy evaluation

Leading and lagging economic indicators that measure the impact of the policy on other sectors/areas.

1. Drop out rates - *for depth*

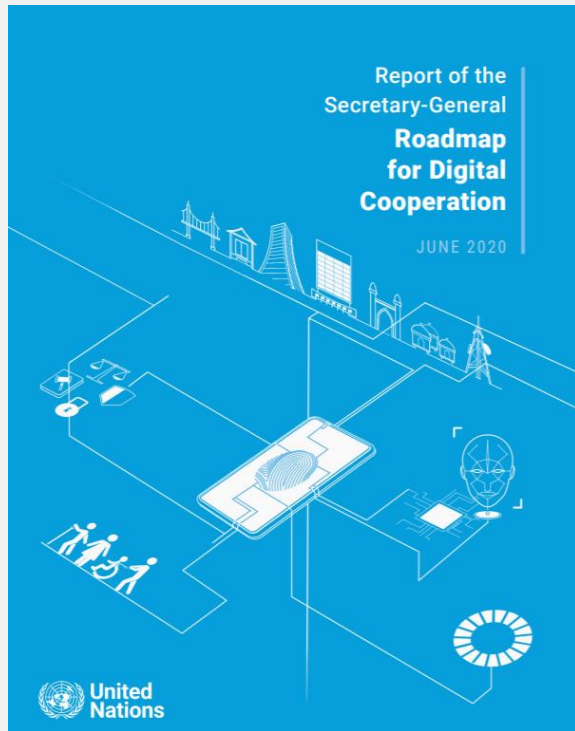
2. # Juvenile crimes, Minimum wage in MSME - *for breadth*

3. Governance

The management structure should encompass the key stakeholders from the respective pillars. For effective monitoring state of the art project management systems and MIS/dashboards should be used. A full time grievance redressal cell should also be constituted as part of any policy intervention.



UN chief calls on global community to expand digital cooperation – (IANS, 2020)



(UN, 2020)

The evolving digital economy is changing fundamental constructs and notions on – technology, politics, power, justice, liberty, ethics etc.. The need for a multi-stakeholder continuous dialog is necessary.

A mandated space for dialog on any digital policy intervention within the country and with other countries based on India's global strategic priorities.

1. Digital technology ecosystem

The power of digital technology is in its interdependences and the associated multiplicative effects. The basic technologies like 5g, big data, Blockchain, computing power etc. have far reaching augmenting effects via applications on human life. Moreover, a lot of these technology are in infancy with huge potential to add value and harm. The understanding of various developmental pathways through conversation is the key to ensure that we largely accumulate the benefits from these technologies.

2. Attributes of change due to digital transformation

The properties or “Vectors” as of digital transformation as articulated by OECD in “GOING DIGITAL: SHAPING POLICIES, IMPROVING LIVES (OECD, 2019) enable the understanding of” cross-cutting effects ” (*ibid.*) of changes in the society and economy as a result of ongoing digital transformation. Conversations are required to understand these attributes & effects in the policy domain.

3. Ethics of digital technology

Already we see ethics of AI and algorithms being deliberated on as the general public realizes the missing explainability of certain actions by machines or humans who rely on machines/algorithms. The policy makers will have to understand the role of ethics in technology and many applications as human creativity sometimes surprises everyone around. Again, conversations are needed in this area to bring in broader perspectives to the discourse.



Conclusion

Policy making in India comes with unique set of challenges (Part – II & Diagnosing The Indian Experience & Part V The Public Policy Process - (Kelkar & Shah, 2019). A look at the technology policy landscape in India especially around digital reveals a disjointed approach. While, Independent approaches hinged around human creativity and commitment can have good effects. The challenge is to broad base this effect as the very nature digitalization is that it is pervasive and interconnected. The Digital Policy Framework uses the construct of a conceptual apparatus to bring resonance among various digital policies that India can undertake.

Digital Policy Framework

Digital Policy Framework, to shape the policies on digital in India.

The Digital Policy Framework is the conceptual apparatus that helps policy formulation using this framework to be Sustainable, Inclusive, Equitable & Innovation-oriented for the comprehensive development of India. The four distinct aspects of the Digital Policy Framework are :

Guiding principles: Digital Policy Framework aligns to the ethos of the constitution of India.

Sectoral Strategy: The 3 category sectoral pillar strategy is aimed at exercising India's "Comparative Advantage" and reploughing immediate benefits back to the system for continuous gains.

Economic Indicators: The T shaped approach to measure economic impact of policy will provide a more holistic view for course corrections and subsequent interventions.

Conversations: A mandated space for dialog on any digital policy intervention within the country and with other countries based on India's global strategic priorities.

End of Question 2

Thank you.

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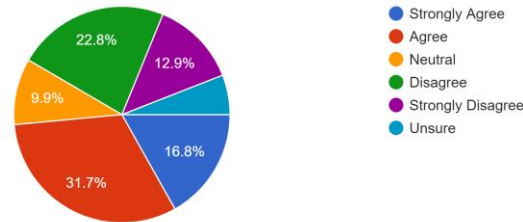
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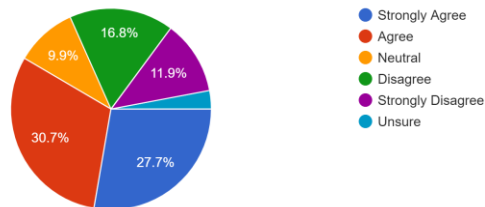
Addendum

Economic view vs Perception of the society

/Q1 of 9/: Do you think the ban on Chinese Apps will help the society?
101 responses



/Q7 of 9/: A ban in the marketplace can have unintended consequences. E.g. 1) A competitive market ensures good quality and price, i.e. value to... it is still a good idea to ban these Chinese Apps?
101 responses



- Survey: Perspective on app ban, Aug' 20

The point of view is based on the primary research (dip-stick) carried out to gauge the perception of the app ban and the various readings done as part of the course.

When presented with an economic consequence of the ban, the respondents still stuck to the original view that the ban is a good idea. 58.4% of respondents viewed the ban to be a good idea (an increase by 9.9% after the fact on economic consequences was presented). This data begs the question “Are people inconsiderate towards fellow citizens?”, or is something else going on?

This dip-stick result corroborates the finding on the different views that economists and the general public have on trade as articulated in chapter 2: The Pains from Trade, Good Economics for Hard times, “...general public is certainly not convinced. They are not blind to gains of trade, but they also see the pains..” (Banerjee & Duflo, 2019)

But, then why did these respondents not see the pains of the ban on some section of society. The answer may lie in the research on human behaviour – Herd behaviour (Individuals influenced by popular discourse), Coherent arbitrariness (where the first question acted as an anchor) etc. – (Kahneman, 2011), (Ariely, 2010)

Bottom line:

1. A pure economic argument does not necessarily influence human behaviour.
2. The tools used to measure perception (e.g. during evaluation of a policy) should take care of the aspects involved in human decision making.
3. Policymakers could take the approach of “nudges” (Thaler, R. H., & Sunstein, C. R. (2009)) that encourage humans to make better choices, in certain well thought out scenarios.

China's response - a game theory perspective

Figure 1: Outcome Matrix

		China	
		<i>Retaliate ban on app</i>	<i>Continue trade with India</i>
India	<i>Trade with China</i>	Outcome 1	Outcome 2
	<i>Do it yourself</i>	Outcome 3	Outcome 4

Figure 2: Game Matrix

		China	
		<i>Retaliate ban on app</i>	<i>Continue trade with India</i>
India	<i>Trade with China</i>	1,3	2,4
	<i>Do it yourself</i>	3,1	4,2

Scores: (India, China)

Point of view is the explanation of China's current response. Changing the objectives and assumptions may also lead to different equilibrium. This model can be used for simulating China's potential moves & strategizing appropriate response.

Assumption:

1. India has 2 strategies – 1) continue to trade with China or 2) “do it yourself” in lines with self-reliance (Atamanirbhar) strategy
2. China has two strategies 1) Retaliate ban on apps with trade tariffs or bans, or 2) Continue to trade with India

The “Outcome Matrix” corresponding will be as in Figure 1

For Game matrix:

1. Assume India's main objective is towards self-reliance and China's is to trade more with India.
2. Assume China cannot do a blanket ban on Indian goods. Then India's preferred outcome is Outcome 3 & 4 compared to Outcomes 1 & 2 - as the decision to Trade with China is counter to the being self-reliant (Do it yourself) strategy of India. Therefore for India, Outcome 3 & 4 > Outcome 2 & 1. Suppose India prefers Outcome 4 to Outcome 3 and Outcome 2 to Outcome 1. The preference orders with these assumptions for India are: Outcome 4 > Outcome 3 > Outcome 2 > Outcome 1.
3. China on the other hand prefers Outcome 1 & 2 compared to Outcome 3 & 4 (in lines with its main objective of trading with India). Therefore its preference is Outcome 1 & 2 > Outcome 3 & 4. Now suppose China prefers outcome 2 to outcome 1 (in lines with doing more trade) and Outcome 4 to Outcome 3 fearing no major impact to India because of its retaliation. The preference orders with these assumption for China are: Outcome 2 > Outcome 1 > Outcome 4 > Outcome 3.
4. Considering Ordinal level preference a score of 4 for best 1 for worst. The Game Matrix is as shown in Figure 2. The first number in each cell denotes India's preference for that outcome and the 2nd number denotes China's.

From the game matrix we can conclude that for China irrespective of India's strategy the dominant strategy is to Continue to Trade with India and for India the Dominant Strategy is to follow Do it Yourself – the self reliant strategy irrespective of China's strategy. Hence the equilibrium is “Do it yourself” and “Continue trade with India” as each player in this game strives to obtain highest score.

This simplistic model, explains why China is only engaged in vocal displeasure than with any retaliatory trade restrictions, in response to the app ban.

Trade-offs: Alternative action that government can take now after the app ban

Trade-offs matrix considering unintended consequences suggests alternative 4 is the better approach among other alternatives

Evaluation criteria\ Alternatives (options)	Weights for each criteria	Alternative 1: Let things be	Alternative 2: Change regulations that reflects governments stand on data protection:	Alternative 3: Special subsidies for app makers producing the same good	Alternative 4: Comprehensive approach with 3Cube strategy
Constitutionality of the alternative	9 %	+	+++++	+	+++++
Efficiency of the alternative	8 %	++	++++	+++	+++++
Effective implementation of the alternative	7 %	+++	++	++++	+++
Social acceptability of the alternative	5 %	++++	+++	++	+++
Political acceptability of the alternative	5 %	+++++	++++	+++	+++
Ensuring equity with the alternative	11 %	+	+++	+	+++++
Necessary state capacity	12 %	+	+	+	+
Financial requirement	10 %	+	++	+++	+++++
Positive General equilibrium effects	15 %	+	++++	++	++++
Alignment to India's self reliant strategy	18 %	+	++	+++	+++++

Scoring scale:

- + low
- +++++ highest

Weights for criteria considering analytic hierarchy process theory

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