TECHNOLOGICAL SOLUTIONS TO GOVERNANCE PROBLEMS

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Abstract

The article examines and historical and broad theoretical issues of governance central to the organisation and functioning of society, surveying the earliest experiences and ideas that date back to the ancient Greeks as well as more contemporary reflections. It also evaluates the politics of India's governance historically as well as in the period following Indian independence in 1947. It points to the shortcomings in governance with particular focus on India in the latter period and the underlying political and institutional reasons for them. The final section suggests that the accident of modern technological revolutions, associated with computing and the falling costs of information storage, significant possibilities of overcoming the shortcomings in governance have become possible. Major changes in the interface between political authority and the bureaucracy and the ordinary citizen are now feasible. It concludes by identifying the multiple dimensions of such changes in the relationship between the state and its citizens owing to digitisation while also recognising the dangers posed by the accumulation of so much information in the hands of political authority on its citizens.

Keywords: Greeks, governance, corruption, India, state, Presidential system computing, digitisation, instituions politics.

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Technological Solutions to Governance Problems

How societies are to be governed is the central problem of humanity, on which most other issues hinge. Governance is the context in which cooperation and collective action become possible and other endeavours, from scientific progress, human well-being and for to creativity occur. Reflections on the problems that arise in creating modes of governance go back almost 2400 hundred years ago, to ancient Greek thinkers, like Plato and reach an apogee with the most original thinker following him, Thomas Hobbes. (Plato, 1974; Watkins, 1973). The issues analysed by them have not changed fundamentally since, and more recent ideas are anchored in the problems of governance they had identified, viz the issue of how political authority should be wielded to ensure social stability and welfare, and the likely impact of mass participation on decision-making to achieve it. The analysis below highlights well-known historical arguments about the nature of governance and its attendant potential difficulties and India's own unfolding experience since independence in 1947. The reflections conclude with an evaluation of the use of modern technology to overcome the serious failures of governance that have occurred in India and mitigating them to some degree it by employing technological solutions.

The question of how a people should be governed is as old as human civilisation itself. One of the supreme achievements of humankind, the impulse and ability of people to cooperate with each other, accounts for the rise and progress of civilisation. It may be hazarded that the impulse to cooperate with each other and the forms of social organisation to which they gave rise were a product of two interdependent phenomena. They first arose from the challenges posed by the environment in which the human species operated. The second was an imperative of how to raise human offspring owing to the prolonged period of nurture required for them to survive independently. Earliest records suggest that a quarter of infants perished in the first year after birth and a half before reaching adulthood, with global population growth remaining static for much of human history, until the modern era. (Roser, 2019). The two phenomena were also conditioned, at a further remove, by knowledge of the imperative to limit consanguinity in reproduction. They prompted various forms of cooperation, including the 'exchange' of women', imposed by necessity, however halting and conflictual that process might have been in reality. But the achievement in engendering cooperation also simultaneously highlighted the problem of how

best it was to be organised, giving rise to what is known as politics.

Over time, politics and how to organise it become a paramount issue of intense discourse within societies as urbanisation became more widespread though the issue was always implicit, even in more nomadic and tribal societies as well. Quite significantly, the discussion of appropriate forms of governing society became established quite early and dramatic ontological breakthroughs in ideas occurred with the passage of time. Some of the best-known discourses on politics and governance occurred in ancient Greece, and although they were paralleled elsewhere, a degree of intellectual parochialism tends to attribute profound reflection on it mostly to societies of European-origin. (Wood, 2008). The issue has always been about the degree of societal participation in governance and its consequences. The original conception of a republic applied to all forms of rule, from monarchies and aristocracies to oligarchies, only excluding self-serving tyrannies on the grounds that the latter were exclusively motivated by self-interest. From the seventeenth century, however, and especially since the American revolution, a republic has been associated with popular participation and excluded hereditary monarchical rule. A republican form of government entailed the rule of law and a constitution to underpin it, but so-called popular participation was limited to owners of property while both the ordinary mass of people, most obviously including slaves even after their subsequent emancipation and women, were denied participation.

Mass popular involvement was predicted by many to be a recipe for chaos, while its absence was regarded by others as a recipe for the dominance of oppressive self-interest and resultant eventual revolt. Of course, the thinkers of ancient Greece, who pioneered the best-known thought on the subject, were not troubled by the exclusion of a majority from any sort of role in society, since they happened to be the slave population.[1]

The entire Western canon on political organisation of society has been inspired by debates pioneered by ancient Greek thinkers like Socrates, Aristotle and Plato.[2] They all thought mass participation would lead to the primacy of those who could persuade the public of their good intentions, but without

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1   This penchant for ignoring and even legitimating the unfreedom of the vast mass of people in society found a shocking echo in contemporary political economy that has been unsparingly observed in Maurice,1983, pp. 82-85 esp.

2   All of them born and dying within 100 years of each other, from Plato's birth in 428 BC to Socrates' murder in 399 BC and Aristotle's death in 323 BC.

having the qualifications to ensure good governance. Both Socrates and Plato thought popular participation in governance and the deployment of rhetoric and sophism, using devious argument, the standard in the Athenian democratic assembly, rather than the truth and facts, would inevitably lead to tyranny. The outcome would, in this view, be descent into self-destruction. In his *History of the Peloponnesian War*, the Greek historian Thucydides highlighted how the great Athenian statesman Pericles, an avowed democrat who was not considered a tyrant, still manipulated the Athenian citizenry:

Whenever he sensed that arrogance was making them more confident than the situation merited, he would say something to strike fear into their hearts; and when on the other hand he saw them fearful without good reason, he restored their confidence again. So, it came about that what was in name a democracy was in practice government by the foremost man. (Torcello, 2019).

In this pessimistic view of popular participation, disingenuous speech is what characterises manipulation by despots in order to whip up popular emotion. It was the manipulation of the Athenian people that precipitated a legacy of instability, bloodshed and genocidal warfare, which Thucydides describes in his famous history. This is the reason Socrates – before his sentence to death by democratic vote –criticised Athenian democracy for privileging popular opinion at the expense of truth. As a result of Greece's bloody history described by Plato in Book VIII of *The Republic*, he concluded that democracy led to tyranny and that unconstrained democracy propelled by the worst impulses of the majority. Further, it was Aristotle, also a critic of democracy, who underlined the paramountcy of the rule of law to avoid mob rule and the demand for instant action and sanction based on emotions. (Baggini, 2018). It is very important to note that both Plato and Aristotle thought five thousand citizens as the ideal number for a polity or city-state and in ancient Greece their populations rarely exceeded 20,000, including families, but excluding slaves. (Kitto, 1991, pp. 64-69). As a result, the political dilemmas of governance, which these thinkers posed about participatory government versus authoritarian rule, would be compounded infinitely for even what amounts to the part of a metropolitan city borough in England today, which far exceeds numbers in an ancient Greek city state in population size. The likely implications for cities and nations comprising many hundreds of millions, like India, therefore multiply mind bogglingly.

Modern twentieth century conservative thinkers have echoed this underly-

ing scepticism of mass participation in politics.[3] This is a tradition firmly anchored in Hobbes' paradigmatic *Leviathan*, on the ever-present danger of a descent into an anarchic state of nature against which autocratic monarchical rule is preferable, though he did not regard a monarchy as the sole desirable form of government.[4] (Rapaczynski, 1987, pp. 17-112). Hobbes' view of a natural order of competitive enmity and its inherent propensity to a chaotic war of 'all against all', because each individual sought to impose his own righteous conception of the truth, was not without inconsistency. Authority structures did exist in society and hierarchies prevailed within the family and communities. In fact, the threat of constant war was a better description of the international society, subsequently described as the realist view, since each national community was at liberty to define its own truth and interests and seek to assert it over others.

The Hobbesian conundrum that forever threatened descent into chaos and civil disorder prompted subsequent thinkers like Adam Smith and Montesquieu to suggest the existence of other innate dynamics and institutional innovations that could mitigate the Hobbesian dilemma. In Smith's highly original view, the invisible hand of market transactions created bonds of mutual self-interest that would prompt cooperation between individuals otherwise predisposed to compete self destructively with each other. Montesquieu admired the English political innovation of parliamentary democracy and the separation of powers to limit the capacity for self-serving rule by an all-powerful executive and considered such institutional arrangements as the solution. (Gordon, 1991, pp.68-87). Inspired by Hobbes and Nietzsche major twentieth political thinkers, like Michael Oakeshott and Leo Strauss, were to predicate their pessimistic view of society on a natural order of inequality and the imperative of rule by an authoritarian elite, hopefully, benign in motive and practice.[5] (Anderson, 2005, pp.3-28). The old dilemma had not produced a viable consensual alternative and the Platonic view has continued to return in different guises. The issue of the capacity to rule, it might be noted, was also the central argument advanced by nineteenth century utilitarians like John Stuart Mill and the major French thinker, Alexis de Tocqueville, to justify British and French imperialism.[6]

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3   See the discussion in Anderson, 2005, pp. 3-28.
4   See the extraordinarily rich analysis in Rapaczynski, 1987, pp.17-112.
5   For a nuanced and perceptive analysis see Anderson, 2005, pp.3-28.
6   Pitts (2006) gives an excellent evaluation of liberal thought that examines the evolution of ideas over the late eighteenth to the nineteenth century, from initial

Such a pessimistic view of politics may be decried as elitist and unsustainable because there are plenty of examples of governance by an oligarchic elite, which failed to deliver stable government and also took catastrophic decisions.[7] More to the point, the absence of popular participation in the modern world is an irrelevant issue except in exceptional circumstances since the ordinary mass of people would not accept such a political arrangement and are likely to revolt and overthrow such an oligarchic or dictatorial form of rule. The recent fate of dictatorial eastern European societies neither provide examples of superior governance nor an ability to sustain themselves in the face of the inevitable popular protest that they seemed to provoke.

Yet, the issue of effective governance by popular and elected governments is not thereby resolved by such political arrangements. Elected governments often perform ineffectually and the practical processes through which they are elected are rarely free of malfunction or even corruption. One critical dimension that fails in varying degree in virtually every modern democratic society that boasts of the rule of law, highlighted as a necessity by Aristotle, is the failure to offer equal and timely access to the law in order to get justice. It is the rich and well-connected who have the privilege of access to due process, often for frivolous grievances. In a country like India there is no recourse to legal redress for the overwhelming majority on most occasions. Thus, the paramountcy of "process" itself in creating democratic forms of government and the associated rule of law essential for giving substantive content to democratic governance, remains an unresolved imponderable.

Indian Governance Issues

The governance of India is an issue that has been addressed in its epics, especially the Mahabharata and by India's most original ancient thinker, Kautilya.[8] As with their European counterparts, they discuss the means of achieving stability, prosperity and relations between polities to achieve security. But the constant warfare and eventual conquest, first of much of northern India in the twelfth century and then most of the rest of the country, right up to the Deccan

scepticism about the right to rule over foreign people of major thinkers like Adam Smith, Jeremy Bentham and Diderot, to support for empire by the mid-nineteenth century.

7   See for example, Tuchman, 1990.

8   For a recent exegesis see the flawed but study of Mitra, S. K., & Liebig, M. (2017).

and beyond, changed the nature of the theoretical and practical discourse on governance. The period of foreign rule really only endured from the height of Mughal rule under Akbar in the third quarter of the sixteenth century to the peak of Aurangzeb's rule in the final quarter of the seventeenth – even if it has usually become the sole preoccupation of post-independence Indian historians it lasted a mere century. The end of Aurangzeb's reign in 1706 was followed by a period of political instability and the emergence of regional centres of power.[9]

These were soon to be usurped by a remarkable marauding private equity firm in the hundred years following the Battle of Plassey in 1757, which created the conditions for the retention of British government control over India by force of arms for a further hundred years. (Dalrymple, 2019). In the first phase of the long interregnum of medieval Indian history, the issue of governance narrowed drastically to raising the maximum taxes and exercising the use of military force by dominant Sultanate and Mughal regimes to fight off challengers, resist incursion from other foreigners and at the same time to prevent indigenous revolt. The problems of governance were resolved by the use of violence, while authority resided in absolute power that was in fact shared by an oligarchy. In the two hundred years of British colonial rule, force which followed became the dominant motif but inducting some of the domestic elite to elicit cooperation was actually more pronounced than under Muslim rule, even if they too had co-opted some groups like the Rajputs.

The period of real intellectual and political interest, for the purposes of this essay, pertains to the period after Indian independence in 1947. It is in this period that the ancient primordial question, beyond the use of force by foreign conquerors to subjugate the indigenous population to rule, arises. By the early 1950s, constitutional structures were being created for modes of governance through the sharing of powers between different federal institutions and the constituent regions of the Indian Union. Political authority was shared by a federal executive with the states of the Indian Union in accordance with a tripartite schedule of authority over issues, exclusive to either or shared by both. The executive itself was subject to consensus in two chambers that reflected the distribution of political power through elections in India's constituent states. And both the individual citizen and the executive were subject to a legal framework, interpreted by a court system. The Indian solution to the question of authority raised by Plato and Hobbes was resolved in favour of extensive participatory

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9   The changes are recorded in Bailey, 1983.

democracy that limited any overweening executive authority. And the rest, as they say, is history. How has Indian democracy and the realisation of the purposes of society functioned under these political and legal arrangements?

Indian democracy quite clearly erred in adopting the Westminster model of governance, presaged possibly by the Government of India Act of 1935. The latter had only evolved through a long historical process of complex mediation specific to the unique experience of British society. In addition, post-India's devolution of powers to its regions created quasi Westminster models in the state government that shared decision-making authority with the federal Centre. It was clearly quite inappropriate to the unique situation of a large and diverse society like India, facing enormous problems, inherited over many centuries. What India had needed and still needs is, to balance the admittedly difficult task of enhanced centralised executive authority with popular consent, in order to facilitate effective and rapid decision-making. Such a political and constitutional architecture was required to address some of India's life-and-death issues after independence in 1947 that were akin to wartime challenges. A different mode of sponsoring popular legitimacy might have been achieved by adopting a Presidential system of government, with appropriate de jure constitutional underpinning rather than the de facto exercise of authority by force of personality and brute parliamentary majorities, which has happened periodically in Indian history since independence. In the case of the exercise of a presidential style of overweening power by an Indian prime minister, only representing a political party in parliament, there is lack of political legitimacy since the prime minister has not been directly elected by a popular vote of the entire country. Furthermore, the principal issue is that of the establishment of a central decision-making authority, in the shape of a President, which exists in countries like France and the US. However, a version of the US constitutional model might have both been more suited for India, which is an even more diverse and larger country than even the US.

A Presidential form of governance in India would need to have been accompanied by appropriate devolution of powers to India's regions, with limits imposed on the Presidency itself, with nationally elected federal chambers, overseeing the probity of the President's functioning. The great advantage of a President elected by a popular nationwide vote would have been to create a sense of collective loyalty and solidarity towards the federal centre rather than

articulating and deepening every pre-existing fissiparous fault line that animated local resentments. This profoundly divisive phenomenon was to become the means for regional political parties to convey their appeal to local populations. And that is exactly what has happened since Indian independence in 1947 in many parts of India. These are exemplified by the contrived enmities of the Dravidianist movement, the irrational parochialism of the cult of so-called 'Marathi manoos' and Bengali resentment towards the Centre, taking the shape of a nihilistic Leftism. India has thus ended up as a country divided along horizontal ethnic, linguistic as well as vertical socioeconomic axes. A Presidential form of government may not have successfully overridden all the underlying inherited fissures of Indian society but the basis of its institutional expression in a Presidency, voted for by the entire citizenry of the country, would have pulled in the other direction and perhaps insinuated a common purpose and possibly provide the impetus for a nascent shared identity to blossom. This is a phenomenon that an already politically centralised Turkey has been experiencing under President Erdogan, who is apparently trying to create a distinctive new collective identity for its people, rooted in the imperial Ottoman caliphal past.

The Indian constitution and its formulation of the process of administering society failed to resolve ancient dilemmas of governance, posed 2400 hundred years ago, of the conundrum between the exercise of unrestrained political authority and the alternative of public participation in decision-making. In India's ill-advised constitutional venture, society's extant fault lines were given prodigious opportunity to flourish and deepen. In addition, the chosen path judged necessary for the urgent socioeconomic transformation of the country compounded India's societal divisions inadvertently, turning its body politic and societal dynamics into an irrepressible monstrosity of terrifying proportions. As the saying goes, the road to hell is paved with good intentions and the well-intentioned great and good, both at home and abroad, proposed a dominant role for the Indian state to accelerate economic growth and achieve equity. Apart from adopting skewed sectoral priorities and giving public ownership a dominant role in major economic sectors, the Indian state inaugurated detailed controls over most aspects of private economic activity. By doing so, it throttled private initiative while devolving excessive decision-making tasks to an ill-prepared bureaucracy. One fundamental error was to impute neutrality to the state, the politicians and bureaucrats, and expect the administration of the

economy to be able to identify desirable goals and follow through with the best objective methods for their attainment. Both aspirations proved largely chimerical and merely wasted precious resources that sought to achieve often unduly demanding goals.

The result was a diabolical admixture of fractured decision-making within the polity in the hands of elites, both regional and national elites, which enjoy huge power over the economic fate of the country, but largely shielded from the consequences of their actions. It quickly descended to the lowest common denominator of contrived parochial discord to incite local animosities in order gain and retain political power. India's elites were also empowered with substantial authority over a multitude of decisions on the economy, both through direct control over state-owned assets and regulatory discretion. Public choice theories of rent-seeking have elegantly identified the corrupt malaise inevitable in such a structure of decision-making on economic affairs.[10] (Hargreaves, 1992). The result was, in the main, the foundation of a predatory state, with the political class funded by malfeasance for private enjoyment and expenditure for the purpose of political activity in the struggle for political and economic power. India ended up with a system of governance with echoes of its past, as a conquered country with regional emirs and the central state capturing rents in myriad ways, directly or indirectly and, in addition, contrived political strife to engender political support for claimants to electoral power. To describe the situation as Hobbesian may be an exaggeration but Indian society exhibited a discernible familial similarity with the phenomenon. Politics and outright criminality became symbiotic across most of the country. The Indian experience suggests a further degeneration of the situation of political chaos that only a truly dominant ruler can inhibit in Hobbes's conception. In the Indian case, the divisions and no-holds barred competitiveness of society at large, identified by Hobbes, have encompassed and overwhelmed the state itself. This is because the framers of India's constitution sought to articulate the very fault lines of society in the identity of the state system itself, under the illusion that it would conform to some notion of democratic probity. The state is no longer above a fractious society but an integral part of it, highlighting a final stage of societal

10   For a theoretical construction of the overall underlying dynamics of democratic systems, though India's is embedded in a particular political culture of a competitive downward spiral, see Hargreaves Heap, S., et al. 1992, pp.217-227 and Krueger, 1974, pp.291-303.

implosion.

Virtually uninhibited plunder of public funds and recourse to bribe-taking were to become the established norm, with politicians and state functionaries engaged in shameless larceny. In the long list of corruption scandals of recent decades, significant episodes include bribery on the Bofors purchase, 2G, coal and the Commonwealth Games, Rose Valley and Saradha chit fund scams in West Bengal and the massive Vyapam entrance examination admissions scandal. The looting of public sector banks and, in some instances despite private ownership, by politically-connected borrowers and accompanied by mendacious lack of due diligence left the country teetering on the brink. Other modes of corruption are also rampant and routine and directly impact the daily lives of ordinary citizens, who need to bribe whenever they interact with agents of the state. Political parties have often become indistinguishable from criminal organisations in the so-called BIMARU states, with Bihar and Uttar Pradesh leading the way into a spiral of grievous depravity, until the recent electorally-mandated turnaround and unprecedented changes in the of course in India's political life. In fact, such criminal misconduct occurs in virtually every Indian state, with Mafia families entrenched in some states as their principal political organisation. It is noteworthy that some of these political enterprises, dominant in India's southern states, enjoy intimate association with evangelists, often themselves criminal outfits in their countries of origin;[11] terrorists from across the border and Gulf countries also seem to have compelling influence in these states. Even worse, murder for political reasons is not uncommon and the nadir was degeneration into collaboration with foreign state adversaries of the Indian Union to achieve personal and party-political aspirations.

Two extraordinary instances defined the rot that had come to dominate India. In 2005, one of UP's major political parties assisted terrorists who bombed New Delhi, killing many, by giving them safe passage through the state and an escort to the capital's borders. More shocking still is the evidence of collusion between the Congress Party government of India with terrorists from Pakistan, inflicting mayhem in Mumbai on 26/11, in a treasonous attempt to gain political advantage over its principal national political opponent. (Mani, 2018).

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11   See FitzGerald, 2019 for a shocking and detailed expose of US religious groups that are nothing short of obstinate instances of criminality though they routinely enjoy the goodwill of US Presidents since they are adept at mobilising voters while robbing them at the same time.

It is now also clear that some major political parties are in fact sponsored by international terrorists on the UN wanted list and now wield political power in India's richest state and city. Such is the degradation of Indian political life that the Congress party, which presided over India's struggle for independence, perceived no incongruity accepting funds from China, with which India is involved in a historic and armed adversarial impasse. Participatory democracy has been comprehensively subverted and the designated authority to manage the economy has allowed both political and bureaucratic elites to loot as well. Plato had predicted such a political order would allow demagogues to persuade voters to elect them and facilitate domination of society by them, also made worse in India by the ability to wield dictatorial power over the country's economic affairs. Whether a benign political dictatorship of the wise, which Plato and others have preferred, would have been feasible or resulted in superior outcomes is the moot question that historical experience has not yet vindicated.

The descent of Indian politics into a quasi- Hobbesian struggle prompted a loss of public confidence in political authority and the state system itself. The situation also accentuated, in society at large, the innate tendency towards egocentric, short-sighted behaviour that is, in the end, self-defeating as well for all parties involved. Free riding and defection in social interaction were widespread because individual good behaviour did not lead to positive outcomes for oneself. A revealing metaphor is driving styles in any Indian city. Each individual driver constantly attempts to take advantage of some perceived immediate opportunity to occupy the supposed best space on the road and only produces negative results for all road users in the bargain. If the political situation occasionally improved in India and better outcomes occurred, it was due to the accident of good temporary political leadership, a degree of necessity as the population grew with corresponding demands for minimum succour, making economic advance imperative, and periodic crises of the kind that occurred in the mid-1960s and 1991.

In recent decades, despite Indian political life remaining a constant impediment to advances, the subsequent partial diminution of state control over economic activity is the principal reason for India's superior overall economic performance. However, the cleansing of Indian political life and civil society remain a formidable challenge that may not wholly succeed beyond the life of a political leadership that has espoused benign goals for ideological reasons. Yet,

it is also clear there is widespread popular hunger for change and high-minded governance and the confluence of public aspirations for betterment and the ability of political leaders to mobilise such sentiments to attain political power might be a ray of hope. But the corrupt pre-existing political establishment is engaged in a bitter political battle to stop the end to its influence and political primacy.

Technological Solutions

Technology has always been pivotal to the progress of human civilisation, whether the discovery of fire, iron tools, the stirrup or the steam engine powered by coal initiating the of the mechanical. In the modern world, the information technology and communications revolution has been of historic significance, where burgeoning computing power, massive storage capacities allied with cheap and superfast Internet and now artificial intelligence, promises unprecedented advances.[12] (Buzan & Sen, 1990, pp 321-339) The question might be legitimately posed whether contemporary advances in technology can mitigate lapses and deficits in governance practices and how some of these technologies are already being deployed in significant measure across the world for this purpose and in India as well.

Owing to rapid digitisation, India is undergoing one of the greatest changes in its many millennia of history. A country divided on multiple axes throughout its tortuous history is being bound together by the invisible connectivity of the airwaves. The speed of the spread is astonishing, and the impact of connectivity will only intensify exponentially with each successive step. Even as India continues to struggle to manage its multiple horizontal and vertical divisions of language, ethnicity, region, caste and religion, the engagement of its ordinary citizens with each other is well on the way to becoming constant and instant; the unknown and anonymous is now a neighbour by virtue of interaction. The era of the telegraph and twentieth century telephone landline is posed to be totally superseded by the Internet and mobile telephony, and the generational leap of 5-G into an altogether new dimension is not far off. The impact of the transformation of governance is already enormous and the political consequences unstoppable as transparency becomes one of its defining operational signatures. The gains in efficiency and consequent enhancement of welfare for the many are obvious, but it also entails the kind of openness that curtails deception and

12   On the importance of state sponsorship of major technological breakthroughs and for its historical import on the eve of industrialisation see Sen, 1984.

enforces probity and mutual compliance. The government's aspiration for digitisation has been evident for almost a decade in the policy of Digital India and the three initiatives of the GST, the Aadhar and Jan Dhan bank accounts, with all their hiccups, are already fully operational and a remarkable phenomenon.[13] (Kant, 2018; Iyer, 2019).

By 2018, more than 1.2 billion Indians had biometric digital identity cards, the Aadhaar. In addition, more than 10 million businesses are enrolled on a common goods and services tax platform. Indian internet subscriptions and data consumption have skyrocketed due to competitive pricing, rising by a factor of four in both 2017 and 2018 and beginning to bridge the digital divide between the laggard states and those ahead; faster growth is occurring in lower income states, indicating a catch-up. Mckinsey estimates that India will increase the number of internet users by nearly 40 percent to approximately 750 million to 800 million and the number of smartphone users will double to between 650 million and 700 million by 2023. The ambition is for the digital economy to comprise 20% of GDP by 2025.[14]

The Government's flagship programme is Digital India and its vision is the transformation of India into a digitally empowered society and knowledge economy. The ambition is for a digital infrastructure to become the core utility, providing governance services on demand to every citizen across the entire country. The National Informatics Centre (NIC) under the Ministry of Electronics and Information Technology is the primary stakeholder in this vision for the transformation of India within an extraordinarily short time span. For four decades the NIC has been at the forefront of creating state-of the-art infrastructure, building solutions and advising government departments on action plans and the adoption of appropriate technologies. The VSAT-based network was introduced as early as 1982 by the NIC and X400-derived electronic messaging service long predates the Internet and adoption of the Internet and World Wide Web was initiated in 1995 by the NIC though there is anecdotal evidence its use may have started somewhat earlier. And the national infrastructure of the network, cloud, video conferencing, the GIS infrastructure, public finance management and digital payments are critical aspects of the digital architecture to enable delivery of services to all citizens.

13   For a comprehensive assessment see Mckinsey Global Institute, Digital India, March 2019.
14   Mckinsey, 2019 OP. Cit.

The benefits of a digitised national registry are visible in the eTransport project, which automated Regional Transport Office across the country. The massive project created a consolidated nationwide transport database with the ability to provide real-time updates and accessibility. Another result is a consolidated database of over 250 million vehicle records and over 150 million driver's license records. T

This information can also integrate data on vehicle insurance with pollution control systems and report of traffic incidents, along with providing a. A 360-degree profile of an individual or vehicle. According to Verma and Dewar, appropriate insurance premiums can also be estimated from such driver and vehicle profiles.[15]

Some key Initiatives of Digital India:

- MyGov Portal to improve engage with citizens in order to provide good governance.
- An ORS portal for citizens to manage their online appointments, pay doctors and engage with govt hospitals.
- Design Framework that facilitates the digital signing of documents.
- Digital Lockers for citizens store their PAN Card, Passport, Voter id card and education mark sheets. The Aadhaar Card is the only id required for access to the Digital Locker.

Digital India should:

- Curb Corruption through transparency and auditability of transactions.
- Increase speed of access to public sector services and provide measurable
- outcomes based on objective criteria.
- Minimise the amount of documentation necessary reducing bureaucratic and delays.
- Ease the use of cloud space on the internet.[16]

Improving India's digital infrastructure and digitising government operations are the keys to a massive transformation of the interface between citizens and the state, enhancing transparency, efficiency and productivity across board. As already noted, important steps have been taken already, with the GST, Aadhar and Jan Dhan Yojana programmes. The Mckinsey study highlights the establishment of the important associated "suite of open application Program

15   The discussion immediately above is indebted to the summary of issues admirably enumerated in Verma & Dawar, 2019, Op. Cit. pp.50-53.

16   Summary derived from Verma & Dawar, Op. Cit. 2019.

Interfaces (APIs) linked to Aadhaar—such as the Unified Payments Interface and Bharat Interface for Money/Bharat QR code for payments, eKYC for electronic verification of customers' identities, and DigiLocker for online document storage— makes up a large part of India's digital foundation and has propelled the country's digital evolution. As part of the Digital India program, the government has leveraged on this unique position of the Public Finance Management System (PFMS) and introduced the Direct Benefit Transfer (DBT)[1] of payments directly to the bank accounts of beneficiaries. The open-source Unified Payments Interface platform, for example, "integrates other payment platforms in a single mobile app that enables quick, easy, and inexpensive payments for individuals, businesses, and government agencies." (Kaka et al. 2019, p.4). These interfaces have eased payments significantly introduced major efficiencies that overcome cumbersome earlier transactions.

In general, digitisation of payments to individual recipients made through the Jan Dhan Yojana inclusive banking system has curbed corruption by staunching leakages significantly and resulted in significant savings to the public exchequer. The IMF has reported a 17% reduction in the cost of public assistance programmes in India following the use of an electronic platform without any corresponding loss of benefits. The use of smart ID cards in Andhra Pradesh to identify beneficiaries of specific programmes and improve their access to information helped reduce leakage by 41 per cent compared to a control group, it said. ("Some reforms in India show benefits of digitalisation: IMF", 2019). Such digitisation protocols have clearly improved the experience of recipients of services from government agencies. In addition, the greater use of online interaction and applications for a whole range of government services immediately curtail opportunities for extortion from the individual citizen by public servants, reduces harassment and wasted time and effort. In critical areas like health and education use of digitisation can enable more efficient deployment of scarce resources.

In the sphere of the provision of accessible health services telemedicine and mobile diagnostic services such as blood testing and scans and the establishment of databases will allow scarce specialist medical personnel to view information and a diagnose with fewer personal interactions. Similar possibilities exist in remote learning with high quality educational content delivered remotely. And novel modes of interaction can also be initiated to ensure a degree

of direct personal engagement between students and teachers. The huge benefits to transportation from computerisation have already been noted, but the momentous achievement has been the effort to digitise land records, scrutinising which constitute a major cost for property transactions. The programme to computerise land records dates back over 40 years and Karnataka, Tamil Nadu and Andhra Pradesh had managed to computerise their village land records by 2007 already whereas elsewhere in the country the lack of clear and adequate data and mismanagement between governments agencies digitisation of land records was proceeding haltingly. Under the subsequent Digital India Land Records Modernization Programme, the government has now achieved over 90 per cent of digitisation of land records. Out of the identified 6,55,959 villages, land records have been computerised in 90.1 per cent or 5,91,221 villages across the country. The digitisation of India's land records has been an unprecedented advance. Establishing the title and ownership of land has always remained an insurmountable issue for centuries, as governments sought to impose revenue demands by taxing farm income. Though fam income has been tax-exempt in post-independence India this concession has been corrupted by the wealthy, claiming such tax-exempt status, despite not being members of the farming community.

The implementation of digital India and cashless online transactions curtail the black economy by easily allowing the monitoring of transactions between merchants and customers. The use of cash still dominates but change is surely afoot and a differential enhanced tax penalty on high value purchases made in cash will prompt increases in digital payments. The GST also digitises sales, obliging merchants to pay appropriate sales taxes, which increases revenues that can be used for urgent public investment and spending and lowers budget deficits. Direct digital payment into bank accounts of subsidies for services like LPG, verified by Aadhar-linked bank accounts, remove delays and impediments to payments and eliminates all leakages. The spread of E-governance facilitates access to personal records like birth and death certificates and creates the possibility for many other types of information to be stored and be made easily available. Significantly, the use of digitisation and the ambition for it to comprise a fifth of India's GDP by 2025 will create large numbers of skilled jobs though some will also be lost and entail the challenge of retraining and redeployment. But the efficiency gains due to greater productivity will also be

substantial.

The use of technology and e-governance introduces huge efficiencies for users and agencies interacting with them. In recent years, e-governance on tenders, disbursement of benefits and formalisation of sectors of the economy hitherto outside its remit has resulted in major savings and increased tax revenues. One major innovation already in use and worthy of a major expansion is e-tendering, which ensures anonymity and reduces the opportunity for bribery to secure contracts. The use of artificial intelligence to recommend successful bidders for tenders will virtually eliminate the endemic and massive corruption that has been institutionalised in Indian political and civic life. Indeed, the very choice of a political career as the path to rapid enrichment may become less attractive as a result. The challenge would then be to attract into political life the high-minded and talented who would be dedicated to public service. The opportunities will have been restricted by the mere use of technology and the transparency it will bring, also enabling greater public scrutiny of the conduct of public servants and their political masters.

To conclude with one specific review of experience on the ground Amitabh Kant of Niti Aayog notes:

In the last few years, governance in India across sectors has been Technology is reshaping the way government is designing and implementing programmes. The use of technology has brought in better systems, greater efficiency and is beginning to have a profound impact on governance. India has combined the use of unique biometric identifiers and financial inclusion for effectiveness in social benefits and to reduce the vast number of illegitimate beneficiaries under welfare programmes. The redefined through business process reengineering, technology and data analytics. Direct Benefit Transfer (DBT) has been implemented across 437 schemes, and helped save Rs 83,000 crore till date. Its implementation has led to 2.75 crore duplicate, fake or non-existent ration cards being deleted, and 3.85 crore duplicate and inactive consumers for liquefied petroleum gas. (Kant, 2018, para.5)[17]

Yet the hopeful depiction of possibilities, quoted above, needs to be tempered with the realisation that there is still a very long way to go before optimism about the potential positive impact of technology and digitisation alter

[17]
https://cacm.acm.org/magazines/2019/11/240364-digital-transformation-in-the-indian-government/fulltext

extant hard realities. The lengthy quote of personal experience below underlines the salutary conundrum and the distance that remains to be traversed before matters improve:

While the Government talks about Digital India and online permissions, there is no evidence that governance is actually being delivered by artificial intelligence driven algorithms and processes. We have to go to Government offices and end up appeasing bureaucrats to click the "okay" button on their screens to approve the applications. This is widely experienced at local levels in building plan approvals, and other similar departments. Compare this with US, where one of my Pune based clients applied for building plans sitting in Pune itself and the algorithm checked the CAD designs and approved it. Similarly, another US based client dealing with imports of alcohol in US, showed how Alcohol and Tobacco Tax and Trade Bureau works without applicants having to enter the office of TTB. All samples of Alcohol had to be couriered with a bar code and reports were emailed to the applicants. The core issue is curtailing the discretionary powers of bureaucrats and having an Ombudsman and a dynamic system of checks and balances in administration, which the current governance system lacks. This is seen excessively in tax departments wherein discretionary powers of tax officials end up in either litigations or businesses having to pay bribes to avoid it. This kind of tax terrorism was rampantly during the Income Disclosure Scheme launched by the Govt of India and worst – even during demonetisation. During demonetisation, when there was a shortage of cash and high denomination currency notes, customs continued to extract bribes north of Rs. 25,000 to clear a single container, and income tax officials took bribes in form of gold bricks to complete assessments and issue assessment orders. This doesn't happen in other third world countries. The South African Revenue Services don't have discretionary powers and cannot issue demand notices without approval of the expert committee comprising of accounting expert, business expert, legal expert, and a peer review by colleagues of the concerned tax official.[18]

Conclusion

The journey from the vexatious problems of governance identified almost 2400 years ago and discussed ever since highlights a profound dilemma that has long haunted humanity. The issue of how good governance can be ensured,

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18   Personal communication from accountant, Mr. Sumeet Mehta, operating in Mumbai with experience on behalf of diverse clients.

through authoritarian rule, whether a benign or malign dictatorship or democratic participation by the ruled, has remained unresolved. And it is unlikely to disappear. The experience of post-independence India, with its vast and diverse population and long history of political, social fissures and disputes provides unique insights into the problems of governance. India's aspiration to create genuine public participation and the devolution of political power to people and disparate regions in governance and institutional structures for that purpose did not produce encouraging results. Instead the country descended into political instability in many states of India and even at the Centre and the unabashed quest of criminal gangs to capture political power. They masqueraded as legitimate elected representatives of a people apparently easily persuaded by the kind of cynical demagogues Plato and his conservative successors, sceptical of democratic rule, had warned so long ago would be the end product. Plato had feared it would eventually lead to civil war and, as Hobbes warned, a "war of all against all". The glimpses of exactly such a civil war have become evident in India in very recent times.[19]

Yet there is a paradox that although India has experienced violence and carnage on many occasions in society at large, for varied reasons, revolt against the established authority and the state itself has been exceptional. It is the dissolution of this instrument of primordial and ultimate authority that would be a prerequisite for total collapse, with all its attendant horrors for everyone. It is of interest to note that the two persistent sources of supposed challenge to the state itself and attempt to overthrow it have come from groups inspired by apocalyptic foreign ideologies and faiths that view political struggle and 'total war' as a periodic societal norm. By contrast, the indigenous Indian majority seems more instinctively rooted in a certain inwardness, in which the failure of the state authority and disenchantment with it prompts retreat into local and social networks rather than provoking a desire to turn to armed revolt against the reigning authority. Although localised indigenous phenomena of political and social revulsion do exhibit various forms of deeply troubling and irrational parochialisms it still seems to lack the contours of a longing for some sort of final struggle.

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19   The recent Delhi riots highlight the threat of serious civil disorder that can be relatively easily instigated by small groups of individuals, with recourse to readily available technologies, and the danger of their spread to other cities across India.

The question posed above, in the Indian context though with relevance for any political system, is whether the use of modern technologies can mitigate the inadequacies of governance. The experience of democracy seems to be a tendency towards its seizure by criminal dispensations, especially exemplified in a country like India. And absolutist authoritarian rule is no longer acceptable in the modern world and nor does it have a historical record of stellar performance. Science and technology have been drivers of historic change in human affairs and the modern digital and computer revolutions have apparently created an opportunity to mitigate some of the chronic aspects of misrule that derive from situational dynamics, i.e. cynical politicians taking advantage and their interactions with citizens providing permissible conditions for misconduct. It seems many forms of interaction, critical for individual well-being and contentment, between the state and authority can be improved immeasurably by digitising them and removing opportunities for misrule and malfeasance. Their examples have been outlined in the familiar arguments above.

The remedies outlined are not a panacea for the eradication of all dissatisfactions and cleavages in society and discontent with governance, but they clearly address some persistent and serious exasperations for the majority in any polity. In a sense therefore such changes brought about by technology limit the ability of functionaries of the state, political and bureaucratic, to harass and unsettle the citizenry. These also raise the bar of performance and delivery that has the capacity to become culturally embedded, just like the recognition by politicians across India that they have to deliver economic growth even as they may be engaged in various forms of misbehaviour. The digitisation of society and governance will lead to a form of democratisation unparalleled in history and merits optimism about the future. But one absolutely critical issue that will also have to be addressed is the threat to privacy and personal freedom posed by the collation of such detailed and private information on every individual citizen. The pursuit of digital efficiency to create a better environment for citizens also enjoins caution and the need for strong safeguards.[20] However, the rise of Narendra Modi's administration is ultimately due to this very public aspiration for betterment that quickly found a constituency, transcending Indian societies' traditional vertical and horizontal divisions. The coming decades will indicate

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20   For a timely and graphic illustration of the grave dangers of a government misusing information and the associated ability to monitor its citizens intrusively, see Strittmatter, 2019.

its durability and whether technology has brought humanity to another turning point in its destiny to self-improve. India's ancient seers would have smilingly recognised the phenomenon.

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