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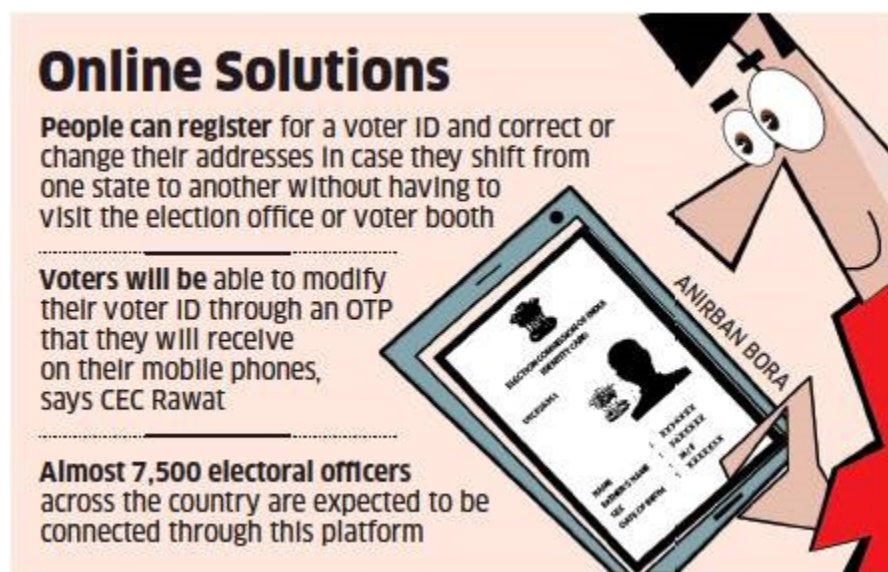
1. **Purchase of S-400 by India:** Russian S-400 Triumf anti-aircraft and anti-missile system (S-400) is a game-changer with its multiple intercept missiles that can aim high and low. It can hit targets just 5 m off the ground and as far as 400 km and faster than any existing aircraft. Its radars are supposed to defeat stealth fighters. The US is concerned about the proliferation of S-400s because they can dramatically upset the military balance, especially vis-à-vis China. Apart from triggering sanctions, US officials are worried about the security implications of the S-400s for their own systems.

2. **Lethal autonomous weapons systems (LAWS)** Dual-use technologies like artificial intelligence and machine learning, and big data analytics are set to transform the world. With the onset of these technologies, the prospects of development of lethal autonomous weapons systems (LAWS) have increased manifold. Concerns have been expressed that autonomous weapons systems can bypass human control.

- a) The technological, military, legal, ethical and humanitarian dimension of LAWS, which has major implications for international security. Ethical and moral concerns are also important as life and death decisions are transferred to a machine. Autonomous weapons systems could go beyond human control.
- b) Artificial intelligence is the most significant technology in the context of LAWS. However, AI is a dual-use technology with large applications in civilian and military domains. On the civilian side, smartphones are using AI on a routine basis.
- c) International humanitarian law, which rests on the principles of distinction, proportionality and precaution.
LAWS raise the question of ethics. Can ethics be coded into machines as legal and ethical questions are shifted to technical domain? Can responsibility, creativity and compassion functions be discharged by machines? The drones represent a step towards autonomous systems as they are remotely controlled by humans.
- d) Restrictions on technologies will be opposed by economic interests and technology generators. As the history of technology shows it is very difficult to stop the march of technology once it is invented. Today, technology rests in the hands of massively large and powerful companies, which are

often stronger than the governments and have much larger financial and human resource capacities Equally, there is a concern that over-regulation of technology can deprive human beings of the positive benefits of emerging technologies.

3. Online applications of technology



Changes can be made through the app called ERONET (Electoral Rolls Services NeT) at any time.

4. With the draft of [National Telecom Policy \(NTP\) 2018](#), [National Digital Communications Policy \(NDCP\) 2018](#), by the Department of Telecom prepares the country for the next generation of communications technologies such as
 - a) 5G,
 - b) Artificial intelligence (AI),
 - c) Machine-to-machine communications (M2M),

- d) Internet of Things (IoT),
- e) Cloud computing,
- f) Automation,
- g) Augmented Reality and
- h) Virtual reality (VR).

5. Times They are a Changin' and How Banks can Deal with it

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- 5.1. Technology changes in Banking sector: Five forces are driving the disruption.
- a) Changing regulations,
 - b) changing technologies,
 - c) changing and growing per capita income,
 - d) changing consumer behaviour and
 - e) Changing global environment.
- 5.2. What this does and what banks should be asking to get ready for the future, as change in bargaining power has been introduced by the bankruptcy law.
- a) **Changing regulations:** The regulations extend beyond banking. In fact **Aadhaar**, the introduction of a unique immutable identity, the data that will be thrown up by **GST** (goods and services tax) and **demonetization** (and the consequential formalization of the economy),
 - b) the change in bargaining power by the introduction of the bankruptcy law and
 - c) the creation of a new market for stressed assets and
 - d) the unpredictable impact of future government action in terms of public sector banks their recapitalisation, consolidation or

- ownership, will create structural opportunities or constraints in the evolution of the sector.
- e) Government action in terms of direct benefit transfer and universal provision of insurance and **Jan Dhan accounts** will require **careful review as both threat and opportunity**.
 - f) Changing regulations is an important force driving disruption and will need careful evaluation to understand the opportunities and challenges it creates.
- 5.3. **Changing technology:** The discussion around digitisation is not new anymore but the full impact it can have on the banking business models is still evolving. Ubiquitous connectivity, almost total data, unlimited storage, massive computing power on mobile devices, machine learning, block chain, robotics and the development of the Indian Technology Stack offer transformational possibilities. Taken together banks have to speedily adapt or perish. Whether it is in the expectations of their customers — in the prices they pay, the channels they use, the turnaround time that is needed or the level of personalisation they expect. Or in the operations of the bank — how they organise, operate, price products, target customers, or indeed the manner in which they work and organise internally and the kind of people they recruit and how they enable and incentivise employees. The possibilities are enormous yet challenging to embrace.
- 5.4. **Growing per capita income:** The broad basing of Indian banking is under way as per capita incomes grow rapidly from less than \$1,000 per capita, to \$2,000 and then \$4,000. This changes the size of the market and the scale on offer will permit new business segments and channels to emerge with differential economics.

- 5.5. **Changing consumer preference:** The relative youth of the Indian consumer will mean that banking services will need to get embedded in entertainment, shopping or social interaction platforms. This will affect both balance of power, competition from outside industry segments and create less loyalty amongst customers unless novel method to engage them are devised to retain them.
- 5.6. **Changing global context:** Global coordination of banking regulations will come with their geo-political costs but state led cyberattacks (from enemy states or terrorist actors) on individual banks cannot be ruled out in the coming decade. The nation as a whole will need to build defences to operate and withstand the changing global context along with careful regulations in the context of cyberattacks. The risk environment in banks will need to focus more on operating and cyber risk than the traditional emphasis on credit and market risk.
6. **Block chain technology** allows users to create and spread information across a large network of computers, which its proponents say lends it both transparency and security. And the applications for the technology are multiplying quickly. For aid and development groups, block chain can come in all shapes and sizes.
- In theory, the technique can reduce transaction costs, fight corruption by making everything transparent, and allow a better record of where food aid is directed, or make sure that medicines are not counterfeited.
 - Those in charge of programmes that directly send money to people in need also see it as a way of more easily controlling

the disbursement of funds or avoiding use of financial intermediaries such as banks.

7. Naval Exercises: Guam, RIMPAC, Trilateral in June 2018

- 7.1. The Malabar naval exercise with Japan and the US the series of war games that began 26 years ago. Anti-submarine operations will be the focus conducted the furthest from India since inception, with three Indian warships as well as the P-8I maritime aircraft taking part.
- 7.2. Another trilateral exercise is the joint, regular naval war games with Thailand and Singapore. Malabar officers said that this year several new, complex features have been added, including joint air operations to track hostile submarines at sea. The Navy will be represented by two indigenously designed and built ships, the multi-purpose stealth frigate INS Sahyadri and anti-submarine warfare corvette, INS Kamorta, Fleet Tanker INS Shakti and Long Range Maritime Patrol Aircraft P-8I.
- 7.3. The INS Sayadri will also participate in the world's largest military exercise, RIMPAC off the Hawaii islands.

8. LNG versus Electric vehicles technology for India:

- a) Compared to Electric Vehicles LNG for trucking and public transport is a better option as it increases the operational life of vehicles and reduces cost and pollution.
- b) Electric vehicles policy proposed will not have any impact either on reducing the consumption of petrol in the near future. Even in the long term its impact would be on a small scale.

- c) The reason is that the electricity needed is in short supply and India's power generation and distribution capacity will take time to support any major use of electric vehicles.
- d) The development of charging stations will take a long time in terms of commercial licence of use and the cost of electricity for charging these vehicles would be high. The small scale LNG infrastructure can be rolled out at a faster pace.
- e) Electric vehicles over their life cycle, are more polluting than LNG powered vehicles as they will generate large quantity of battery waste, which is toxic. Moreover India does not have any battery waste processing capacity. LNG on the other hand does not add another category of waste.