"Technology and Diplomacy"
by Amb. (Retd.) Mahesh Sachdev

Salutations (as appropriate)

In a different avatar nearly four decades ago, I would have sat on the other side of this divide. I would have looked at the speaker in a semi-agnostic manner and wondered if Technology and Diplomacy had anything in common at all. If this chap can conjure a link between the two, what is he going to prove next - Phlogiston has negative weight?

No, I am not that ambitious! All I want to discuss is the interplay between technology and diplomacy and share my own experiences of being trained as a nuclear physicist at this institute and landing up practicing international make-believe - diplomatic equivalent of, say, appointing an international commission to investigate if Phlogiston was made of anti-matter.

In any case, I do hope IITK continues to uphold its longstanding reputation of being last refuge of all orphaned theories.

Let me begin by stating that diplomacy and technology are two fast expanding domains in contemporary era with an increasingly large overlap. When the two act in concert, they reinforce each other; when at cross purposes, they sow confusion or worse.

The discourse can be divided into two independent - albeit interrelated - channels: (a) How has technological advancement impacted upon diplomacy? - and, (b) How has diplomacy affected technology? We may also look later at India's specific case and try and venture into future interplay of these two. Without limiting our discussion to any specific time frame, we focus on the past two centuries which have seen rapid advances in both technology and diplomacy.

A study of technology's impact on diplomacy is perhaps more tangible and easier of the two aspects. In general, technological progress has quickened the pace of diplomacy - but has simultaneously brought it outside the Ivory Tower it was earlier confined to. The following specific transformations in content and style of the diplomacy today can be attributed to technological inputs:

(a) Logistics: Gone are the days when the foreign envoys took weeks and months to arrive at their destinations on horseback or steamers. Thanks to faster transportation today, a diplomat can reach most capitals within 36 hours, while going to other outposts may take a bit longer. The travel is not only faster, it is more comfortable, even as other daunting barriers, such as consular and health restrictions often remain. However, the speed and relative ease is not all an unmitigated blessing. These also mean that a diplomat is not left alone as his or her minders from headquarters travel more often to breathe down his or her neck. Ease of travel has

also added new complications to the core diplomacy - from huge growth in People-to-People (P2P), Business-to-Business (B2B) contacts to greater mutual awareness at popular levels. For instance, nearly half a Crore Indians live in the Gulf countries. Our Gulf-based diplomats are understandably pre-occupied looking after the community-specific issues mainly related to consular, labour, education, etc., often to the distraction of traditional diplomatic tasks, such as reporting on the local geo-political developments. Internally, ease of logistics has pushed the diplomacy to become more involved and people-centric. Today's ambassadors are expected to travel more extensively within countries of their accreditation and receive more people than would have been the case earlier. However, the progress in logistics has been uneven and commuting of travelling in much of Sub-Saharan Africa till remains as challenging as perhaps in ibn Batuta's times.

(b) Communication: Two centuries ago, diplomatic envoys waited for weeks before instructions arrived from headquarters typically by the diplomatic bag. Arrival of the telegraph in 1850s was hailed as a great breakthrough. However, a lot has happened to communication technology since with radio, telex, fax, internet and its various avatars making communications instantaneous and more extensive. When I joined Indian Embassy to Syria in Damascus in 1980, our umbilical cord was once a week diplomatic bag which brought everything from official correspondence, personal letters, newspapers, magazines and books. The day of the incoming diplomatic bag was full of anticipation. Similarly, the day of the outgoing diplomatic bag had its own deadline to be met. On other days, our contacts with headquarters and other Indian missions was only through a telex machine. IDD connectivity was quite tenuous and unreliable. But three decades later when I ended my diplomatic career last year in Nigeria, fibre optics based broadband internet had become the new umbilical cord we could not do without. The diplomatic bag frequency was reduced to once in a fortnight and it contained only one copy of Indian newspapers and magazines. Advent of mobile phones, internet and "hotlines" has dramatically reduced the time to minutes and hours. However, it's not all good news. The ease of communication has also meant a huge surge in quantity of information exchanged. Today's "Ambassador Extra-ordinary and Plenipotentiary" is often inundated with far too much information - and much of it is of marginal value. Sifting the information overload and focusing on the important developments is more of a challenge now than ever before.

(c) Media Management: Technology has been a bit of a spoiler of fun diplomats use to have with media. Till recent decades, a diplomat could get away with public utterances that were either absurd or damaging or both - as not many took notice. He could embellish his role and exaggerate his accomplishment because his minders had few independent sources to verify. His impunity grew with distance and obscurity of place of his assignment. Alas, those golden days are long gone and space for mistakes or boastful claims has shrunk drastically - thanks to power of internet, social media, satellite television etc. Today's Ambassador needs to

constantly look over his shoulders: If it's not a minion with latest cable of instructions, it is a competitor armed with more updated information. The latter may even be a news-hound with a trick question or an NGO out to catch his country on the wrong foot. With technology breathing down his neck, His Excellency has no place to hide! With media and many of his interlocutors having much the same access to the real time "news", a diplomat's earlier claim to be the only authentic articulator of his government's policy stands eroded. Like Alice in wonderland, he has to run twice as fast to stand still. Moreover, some developed countries often use their preponderance over the news media and their faster access to the communication technology to arrogate themselves the role of sole articulators of the viewpoints of the "international community".

(d) <u>Intrusion</u>: Spying and snooping have always been constant threats to diplomacy; however, technological advances have taken this contestation to a much higher level. This cat-and-mouse game between encryption and code-breakers was best illustrated by the two recent high profile cases of "self-goals": "Wikileaks" by Julian Assange in 2010 and so called "NSA-gate" by Edward Snowdon in June 2013. By releasing thousands of the seemingly credible US classified cables, these two cases caused deep embarrassment to Washington and annoyance to the friends and mirth to her foes. These cases not only created new paradigms, but also disclosed the extent to which technical means have been able to intrude into "secure" diplomatic communications. Purposively created computer viruses have also been used not only to penetrate alien systems, but also cause serious harm and disability to strategic assets. These cyber-spies do not just target military or diplomatic secrets, they also try to steal technological and personal data. These activities are quite serious threats to the targeted victims in peace-time; so implications for such arsenal during actual hostilities can well be imagined.

(e) <u>Military Technology</u>: During the past two centuries, the destructive power of the military technologies have advanced from muskets to megaton nuclear warheads. The global destruction caused during the two world wars led to founding of the League of Nations and the United Nations respectively. Clear military technological superiority of one side in a conflict has often complicated diplomatic efforts towards its resolution. The unthinkability of global nuclear holocaust has spurred diplomacy towards containment and disarmament. Although it remains a controversial matter, major diplomatic efforts have been invested in creating bodies such as Nuclear Suppliers Group (NSG) and creating "Safeguards" as well as negotiating international treaties for Nuclear Test Ban, Non-Proliferation, Fissile Material Cut-Off etc. Other military technology-related issues from chemical and biological weapons to proliferation of small weapons with non-state actors, such as terrorists, have also posed challenges to international diplomacy, which has so far been only partially successful in mitigating these risks.

(f) <u>Climate Change</u>: Man-made factors have been held largely responsible for causing earth's climate to change over past two centuries, with such manifestations

as global warming, ozone layer depletion, shrinking of polar icecaps, environmental pollution, etc. While growing use of fossil energy for transportation and power is largely credited for such deterioration in global climate, other factors such use of harmful chemicals, growth in population and consumerism have also contributed. Over past two decades, the international diplomacy has repeatedly tried to put together a frame-work to arrest the causal factors, but even mild commitments under Kyoto Protocol have not been implemented by the industrialised countries which bear the historic responsibility for the climate change catastrophe. Meanwhile, technology has been marshalled by both sides to bolster their respective negotiating positions. While industrialised countries have used it to promise reduction in their energy intensity, making greener, alternate and renewable energy more viable and sustainable and bringing in innovations such as carbon sequestration. On other hand, the developing world, with average per capita energy consumption a fraction of the developed countries, has sought to dispel the "development vs. environment" argument and sought access to technologies which enable them to leap-frog over the polluting stage. Net result of this techno-gibberish has been more hot air - both literally and figuratively.

Having enumerated some ways in which technology has affected diplomacy, it's now time to look from the opposite end of the periscope: What has been the impact of diplomacy on technology? The issues may look less weighty this time, but these are still quite substantive. The following segments are worth mentioning:

(a) Intellectual Property Protection: All scientific discoveries and technological breakthroughs are, in essence, intellectual properties. It is necessary to acknowledge, reward and encourage them through protection mechanisms such as Copyright, Patents, Trademarks, Industrial Designs, Geographical Appellations, etc. These "Intellectual Property Rights" (IPRs) need to be enforced globally through international conventions. At the same time IPRs cannot be either absolute or till eternity so as to allow socio-economic development and market growth. The rise of "open-sourcing" of software, etc. is a case in point. Since 1867, the international diplomacy has been seized of this challenge and today a swathe of International organisations exists for this purpose. Most important of these is a United Nations' Geneva-based agency called World Intellectual Property Organisation (WIPO) created in 1970. It supervises the work related to promotion and protection of IPRs as enshrined in a number of international agreements such a Paris Convention (1883) and Berne Convention (1886), etc. World Trade Organisation (WTO), the UN Educational, Scientific and Cultural Organisation (UNESCO) as well as other specialised international bodies also have some roles to play in this regard. A Patent Law Treaty (PLT), signed in 2000 is now in force, A more comprehensive Substantive Patent Law Treaty (SPLT) has been mooted. It aims at going far beyond formalities to harmonize substantive requirements such as novelty, inventive step and non-obviousness, industrial applicability and utility, as well as sufficient disclosure, unity of invention, or claim drafting and interpretation.

(b) TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is an international agreement administered by the World Trade Organisation (WTO). It sets down minimum standards for many forms of intellectual property (IP) regulation as applied to nationals of all the WTO Members. This agreement, binding upon all WTO members, creates high comfort level for all stakeholders interested in monetising their intellectual property. It is one of the more tangible gains of the Uruguay Round trade diplomacy that created the WTO itself. However, at subsequent Doha Round, India and some other developing countries successfully created a caveat to TRIPS permitting exceptional treatment to the goal "to promote access to medicines for all." This episode illustrates the constant tussle between absolutist and development-priority strains of trade diplomacy.

(c) International S&T Cooperation and Regulation: As much of the current science and technology related pursuits are undertaken as an multinational effort or outside national borders, specialised international mechanisms are often required to codify them. Thus, special purpose scientific and technological platforms have been created to discuss and decide on terms and references. There are some well known international agencies such as International Atomic Energy Agency (IAEA), Organisation for the Prohibition of Chemical Weapons (OPCW), International Energy Agency (IEA). Additionally, other specialised bodies exist to collectively supervise cyberspace through Internet Corporation for Assigned Names and Numbers (ICANN), oceans through the International Maritime Organisation (IMO) and the UN Conference on Law of Seas (UNCLOS). International agreements such as Outer Space Treaty (1967), Moon Treaty (1979), and various treaties governing polar matters also exist. Moreover, diplomatic underpinnings have also facilitated such international mega-projects as CERN, International Space Station and ITER Nuclear Fusion Research, etc. In general, diplomatic negotiations to usher in such very elaborate and expensive projects are based upon the benefits or spin-offs being apportioned commensurate with member state's commitment of resources.

The Future: As we notice, synergy of technology and diplomacy is often greater than sum of the two. Depending upon the initial objective and motivation, it has mostly been a force for good and helped mitigate societal and economic challenges. However, opposite is often true as well.

Like many other inter-disciplinary issues, technical diplomacy requires expertise of both aspects involved and an out-of-the-box problem solving approach. This poses its own challenges of anticipation, team-work and consensus-building and negotiating an international agreement.

Going by the increasing interface between technology and diplomacy, we can safely expect this trend to continue in foreseeable future. New challenges such as environmental issues, food, energy, bio and cyber security, global epidemics, etc. would keep calling for this to happen. At the same time, technology and diplomacy

would need to ensure that their mutual engagement is not used for partisan political ends.

How has India fared in synergising the technology and the diplomacy to serve her national interests? On face of it, India has world's second largest technically qualified manpower. We do have proven capabilities in areas such as IT, bio-technology, agricultural research, Pharmaceuticals, nuclear technology and space. India also has significantly large diplomatic profile. Yet, our footprint on technology related diplomatic space has been sub-optimal, though improving. There are a number of factors responsible for this state of affairs.

First is the paucity of human resource, esp. at diplomatic end. When I joined Indian Foreign Service in 1978, only four out of twenty recruits had post-graduate science background. Rest had studied other disciplines. Specifically, we had no engineers or doctors in our batch. However, thanks to subsequent changes in syllabus for entrance examination, the candidates qualified in technical and scientific disciplines now constitute a majority. This has created a large pool of technically savvy cadre in the Indian Ministry of External Affairs, albeit at junior to middle-rung levels. Simultaneously, need-based structures for such as Investment and Technology Promotion division, Public Diplomacy, Development Partnership Agency (DPA), etc. as well as assigned posts of Scientific Advisors in some missions abroad have been created that utilise cutting-edge technology. For example, Pan African e-Network (PAeN) is an over hundred million dollar programme gifted by India to all 54 countries of the African continent. It offers badly needed tele-education, tele-medicine and VVIP communication facilities to Africa. It is managed by pooling resources from MEA, TCIL and a number of Indian hospitals and universities.

Secondly, India needs to attach higher priority to both creating cutting edge S&T capabilities and supporting them diplomatically. Better co-ordination and interface between various concerned stakeholders is required.

Thirdly, dabbling by our formidable "science bureaucracy" into diplomacy often adds scant value to either. Apart from MEA, there are separate S&T set-ups for international cooperation in Ministries of Environment, Health as well as the Departments of Science and Technology, Atomic Energy, Space, Bio-Technology, Ocean Development, IT, etc. Although there is no need to over-centralised these structures, some changes are desirable. At official level, the fixation with signing cooperation agreements (which often remain only on paper) needs to be curbed. Instead, the objective should be clearly identifiable national interest. Other stakeholders and end-users outside govt-to-govt network need to be encouraged to contribute.

I wish to conclude by mentioning an important issue. During my assignments in developing countries, I have personally noticed how many of India's technological *juggad* are more appropriate to third world countries than available western high tech

alternatives, which are unsuitable for being costly and technology-demanding. Some of such Indian adaptations are fairly well known: generic medicines, bio-gas plants, Tata Nano car, three-wheelers, CNG-driven vehicles, etc. Yet, there is no Indian agency to promote, franchise and market such innovations abroad. On the other hand, many developmental problems abroad are looking for simple solutions - which our R&D labs can well provide. Such exchanges would not only reinforce relevance of our technology, but also boost our diplomatic profile.

I thank you all for listening to my lecture. I would now be glad to have your feedback, if any.

(~2,910 words)