MARG DARSHAN

तमसोमा ज्योतिर्गमया

Ctrl THE SYSTEM

End COR**R**UPTION

LEVERAGING TECHNOLOGY
TO PREVENT CORRUPTION

CVC - Training for Vigilance Officers of PSUs at Bangalore, organised by HAL on 16th Sept 2022

Lighting of lamp

Shri Arvinda Kumar, Vigilance Commissioner addressing the participants

Honouring the chief guest by Shri E P Jayadeva, Director (Operations)-HAL

Shri Arvinda Kumar, VC, Shri P Daniel, Secretary CVC & Shri E P Jayadeva, D(Ops) on the dais

Presenting a memento to Shri Arvinda Kumar, Vigilance Commissioner by Ms Kalyani Sethuraman, CVO-HAL

Group photo of CVOs along with Vigilance Commissioner and other CVC Officials

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Inaugural of 24th Vigilance Officers' Conference at Lucknow

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सी. बी. अनंतकृष्णन
अध्यक्ष एवं प्रबंध निदेशक

C. B. ANANTHAKRISHNAN
Chairman & Managing Director

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हिन्दुस्तान एरोनाटिक्स लिमिटेड
मुख्यालय

HINDUSTAN AERONAUTICS LIMITED
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www.hal-india.co.in

Message

Dear Colleagues,

I am pleased to learn that vigilance department has dedicated this edition of Marg Darshan to an extremely vital subject *"Leveraging technology in preventing corruption".* I truly appreciate the consistent efforts of team vigilance in creating awareness among employees.

Technology has become an integral part of our lives by bringing with it a vast number of benefits, making us more creative, productive, and innovative. It goes without saying that at the dawn of digitalization, an age plagued / overwhelmed with rampant technological advancements, employing the best use of IT assets is of paramount organizational concern.

We must also understand that corruption is hydra-headed problem that demands a multi-pronged approach to deal with and there is no doubt that technology has already been playing a great deal of role in preventing corruption.

I am confident that the readers will be immensely benefitted and enriched with this edition of **Marg Darshan**, as it gives good insights and perspectives on the subject from writers of diverse backgrounds and experts in their domain.

Time is evolving and we should so too. Technology is indeed the future! I again compliment the vigilance department's recognition of this fact. I convey my best wishes for this new edition of **Marg Darshan**.

Jai Hind

(C.B. Ananthakrishnan)

Place: Bengaluru
Date: 21.09.2022

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कल्याणी सेतुरामन,आईआरएएस
मुख्य सतर्कता अधिकारी

KALYANI SETHURAMAN, IRAS
Chief Vigilance Officer

HAL

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CVO's MESSAGE

Dear colleagues,

It is a matter of great pride to address all of you through another edition of Marg Darshan. This edition focuses on the theme "Leveraging technology in preventing corruption".

Vigilance is essentially a function of the management. The aim of vigilance activity is to enhance the level of managerial efficiency and effectiveness in the organization. The strategy of preventive vigilance is to evolve an environment of integrity and to add values to the system for increasing transparency and accountability.

Confucius said "By three methods we may learn wisdom: first, by reflection, which is the noblest; second, by imitation, which is the easiest; and third, by experience, which is the bitterest". Improvement in vigilance administration is possible through preventive vigilance initiatives of leveraging technology thereby preventing the bitter experiences of corruption.

The central vigilance commission has been advocating the idea of identifying areas where use of technology can bring in efficiency, economy as well as transparency to curb corruption. Hence, the focus is to integrate preventive vigilance in business processes through leveraging technology and reduce complaint driven vigilance administration.

When we speak of leveraging technology, we are referring to the use of technology to make significant changes in business. Our company has been a front runner in leveraging technology through various IT enabled tools. The suggestions of vigilance department have been considered by the management at various stages. E-procurement, e-payment, e-auction of scrap material, computerization of APRs (annual property returns), declaration of results of interview in 48 hrs, updating tender details in website, reforms in delegation of power etc are some of the achievements made by the company through leveraging technology. Vigilance department remains committed to preventive vigilance measures through leveraging technology which is an essential tool aiding the inclusive growth of the whole organization. I hope this edition of 'Marg Darshan' will enlighten us to move forward further in the direction of "Leveraging technology in preventing corruption".

I am thankful to the authors of articles and all who have contributed to make this edition of Marg Darshan so enlightening.

Place: Bengaluru
Date : 21ˢᵗ Sept 2022

(Kalyani Sethuraman, IRAS)

www.hal-india.co.in

Shri R Madhavan, CMD-HAL being welcomed by Ms Kalyani Sethuraman, IRAS, CVO-HAL, at 24th Vigilance Officers' Conference at Lucknow

Release of Marg Darshan Vol. XIX, Issue-1 at 24th Vigilance Officers' Conference at Lucknow

Leveraging Technology in Preventing Corruption

Shri G.C. Pati, IAS (Retd.)
Former Chief Secretary to Government of Odisha
and Former Secretary DDP (MoD)

An independent non-governmental organization, Transparency International defines corruption as "the abuse of entrusted power for private gain". Corruption causes serious distortion of governance system in order to enrich some private persons at the cost of the public welfare or public interest. The instances of corrupt practices include demanding bribe by a government functionary to discharge an official responsibility or implementing corruption-prone schemes in preference to schemes which could have resulted higher public goods, or giving purchase order or tender etc. to a preferred person who is a collaborator or a friend compared to a person who could have given maximum benefit to government. It can also include giving direct or indirect bribes or inducements to the voters or adopting unfair means to win elections or to get some favours. Corruption can affect any institution, any functionary/ executive and it can be all pervasive in the system.

2. Corruption adversely affects democracy by compromising public interest and obstructing delivery of services by government to the citizens. The economic growth and employment generation also decline as a result of corruption in view of the uncertainties created about the outcome of any investment related activities in the economy, causing reduction in investment. Even after paying bribes to a government functionary to facilitate investment, the investor is not sure if the bribe taker can ensure smooth progress of his investment. Illegal payouts like bribes generate black money in the economy, adversely affecting tax revenue as well as the government expenditure. Further, in a corrupt society the poor persons suffer more due to their inability to pay bribes to avail government services and it can aggravate the social inequality besides perpetuating the poverty. Thus, corruption is a major factor responsible for defeating efforts of governments for reduction of poverty and improvement of socio-economic conditions of people and hence, it is a menace for a country.

3. In this background, the strategy of Government of India to apply information technology (IT) for improving delivery of government services to people has been found to be very effective in reducing corruption in view of greater transparency and less human interface while providing services to the citizens. We can experience the impact of IT in a number of activities like dealing with a bank

or government authorities. Provision of net banking facilities by the banks has revolutionized the banking services which can now be accessed without physically visiting the bank branches. Salaries of almost all employees of government and private sectors are being paid directly to the bank accounts of the employees. Similarly, the pensioners need not go to the government treasury to get their pension drawn physically. This has reduced person to person contact in different offices for disbursement of personal entitlements, which has substantially reduced the scope for corruption.

4. Another important technology initiative taken by Government of India (GOI) is the unique identification number for Indian citizens (Aadhaar) with digital biometric records of the citizens. GOI has also been able to link the bank accounts of the account holders with their Aadhaar, enabling direct transfer of benefits (DBT) under different welfare schemes of the government directly to the bank accounts of the beneficiaries, substantially reducing the possibility of corrupt practices in administration of such schemes linked to Aadhaar. One such example of application of DBT is in respect of disbursement of LPG subsidy to the eligible beneficiaries under PAHAL scheme. As per the GOI reports available in public domain, implementation of the DBT for LPG subsidy has eliminated a large number of fake or duplicate beneficiaries who were availing the subsidy in earlier system and has resulted in saving of more than Rs. 14000 crores for GOI in one year. Similarly, most of the welfare benefits like old age pension or widow pension etc. are being administered in DBT mode ensuring timely disbursement of such benefits to the eligible beneficiaries. GOI has launched the PM Kisan Scheme successfully under which cash assistance to the farmers is being disbursed to the eligible farmers through DBT. This has opened up the possibility of administration of different schemes for farmers' welfare, like fertilizer and food subsidy in DBT mode, which can substantially reduce misappropriation of funds and corruption apart from benefitting the genuine farmers directly. Market distortions introduced due to the present system of distribution of subsidized products through trade channels will be removed with adoption of DBT, which can result in huge savings of government expenditure like the one in LPG subsidy scheme.

5. A very good example of application of technology is in respect of the land records. Now records of ownership of land or record of rights are available online for almost all the states including Odisha. People can verify such record of rights online to check the ownership record of a plot of land without visiting the revenue office. Since most of the litigations in rural areas are on account of the discrepancies in ownership of land, online data of updated record of rights will go a long way to reduce land related disputes apart from reducing corruption as a consequence. However, the updated maps of land are not available online for many states, which reduces benefits to people that would have accrued if the updated record of rights with the maps would have been displayed online.

6. Application of IT along with the section 4 of the Right to Information Act 2005 (RTI) has facilitated voluntary disclosure of relevant information relating to different government offices and agencies in respective websites, making the government functioning more transparent and accountable. Higher degree of transparency reduces corruption since there is good possibility of the activities of corrupt officials being exposed in a transparent system. However, there is a need for close supervision of senior government functionaries as well as of the vigilance authorities to ensure that the websites are updated regularly as required under the RTI. If an organization or department of government is found to have not updated its website for a long time, then it should be presumed that it is due to some corrupt practices in the organization and requires intervention by vigilance and higher authorities.

7. Leveraging technology in administration of Income Tax and GST has benefitted the public exchequer in terms of higher revenue collection and healthy growth of tax revenues. Such technology-based taxation system has eliminated human contact between tax officials and tax payers, except for the cases of suspected evasion or malpractices. Tax payers resorting to illegal actions to evade taxes are being detected more easily in technology-based system enabling the tax officials to concentrate on legal action to be pursued against them without bothering other tax payers, who are prima facie paying taxes honestly. This effectively reduces the cost of compliance for honest tax payers and those who are suspected to be indulging in evasion of tax take the risk of facing deterrent legal action by the tax officials. In such a system, risk-based audit system can be put in place to detect evasion of tax and the scope for corruption is minimized substantially.

8. Application of technology in the areas of governance as discussed above has improved the quality of government services to the citizens, while reducing the scope for corruption. However, there is a need to regularly review the working of the IT based system particularly to ensure effectiveness and security of the systems. Another activity for application of IT is the Government e-Marketplace (GeM), which is an IT based platform to facilitate procurement of different goods and services by the government organization. The GeM platform has provisions for registration of vendors who are interested to supply to government and for monitoring there lease of payments to the vendors from whom the material is procured. Such a system has potential for preventing corruption in process of government procurement due to better transparency, data storage and record system.

9. Spread of smart mobile phone technology and internet access in interior rural areas has further enhanced the scope for adoption of IT based system in all areas of governance. But, in many cases, concerned departments are struggling to put in an appropriate user-friendly and effective IT system to provide better services to citizen online. The challenge for the government is to expand application

of IT to all areas of its functioning of government with full transparency for general public except for the activities which cannot be revealed in public domain. This will go a long way to substantially reduce corruption at different levels of governance.

10. With application of technology, the vigilance authorities can easily identify the officials likely to be indulged in corrupt practices. The posts in different offices which are corruption prone can be identified by analyzing the cases detected in the past as well as recent times and for such posts, the activities can be computerized fully so as to eliminate the scope for corruption. A watch on the activities of suspected persons can be kept more effectively by leveraging technology. Apart from such steps for improving preventive vigilance, the technology can be leveraged to expedite investigation of pending complaints of corruption by analyzing digital foot prints of accused person though his activities in office or through transactions in their bank accounts which can be made available by the banks for scrutiny of the vigilance authorities. With technology, better quality evidence can be collected against accused persons, which can be more reliable in the court.

11. Now-a-days, the security agencies are deploying technology in a big way to catch the criminals. Technologies like tracking of mobile phones as well as the social media have helped the security agencies to apprehend the criminals. Technology is also helping to better address the problems of extremism and terrorism. Online information system for the police stations and CCTV technology linked with internet have excellent potential to improve the efficiency of the police to control crimes. By eliminating individual discretions, the technology can eliminate corruption in the system of police administration.

12. Access of the public to social media and internet has empowered the common citizens who can now put across their grievances before higher authorities if some functionary is harassing or trying to compel them to give bribe to avail some government service. Quicker dissemination of public grievances through social media or other IT based platforms, have greatly discouraged corrupt officials to indulge in corruption lest they should be exposed before higher authorities with the help of a smart mobile phone or any other technology.

13. Application of technology has also revolutionized the media which can now expose corruption with better evidence like recording of telephone conversation or video recording etc. Thus, a corrupt official has now to face a much higher risk of his corrupt activities being exposed by the media by use of appropriate technology.

14. It is clear that application of technology has opened up huge possibilities before government to control and prevent corruption in public life. But as most of the vigilance officials may not

be aware of the nature of technologies being used by corrupt officials, there is a need to impart them training on how technology can be leveraged not only for improving preventive as well as punitive vigilance, but also for improving delivery of quality government services to the people.

(The Author of this article holds B.Sc. (Honours) in Physics from Utkal University and M.Sc. in Physics from IIT, Kanpur. He joined Indian Administrative Service (IAS) in 1978 batch and retired as Chief Secretary to Government of Odisha in November, 2015.

Enriched experience of the author under the Government of Odisha included the Departments of Revenue, Finance, Panchayati Raj, Rural Development, Animal Husbandry and Industries etc. He was posted as Secretary, Department of Defence Production, Ministry of Defence from August, 2013 to July, 2014. He worked as Chief Secretary, Government of Odisha from August, 2014 till his superannuation on 30th November, 2015.)

Moral Story

A villager had a donkey. He earned his living by transporting goods from place to place on that donkey. One early morning, he loaded the donkey with salt and set off to the town. A stream ran across his way to the market. As the donkey walked through the stream it slipped and fell down. A good deal of salt was washed away and the donkey felt light. The donkey thought it was quite a good trick to make the load light.

Next morning, the man again loaded it with salt. The donkey played the same trick and got light. The master saw through the game and made up his mind to teach the donkey a good lesson. Now, on the third day, he put a bale of cotton on the donkey. The silly animal tried the same trick once more. Soaked with water, the cotton load became much heavier than when it was dry.

Moral: The foolish donkey was punished for his bad intention.

The wealth earned through pious means flourishes, and that through dishonest ways bring destruction ultimately.

- Atharva Veda

24th Vigilance Officers' Conference at Lucknow, Day-1

Inauguration of conference by Smt Mamta Sanjeev Dubey, IFS

Address by Ms Kalyani Sethuraman, IRAS, CVO-HAL

Session on DEC by Shri Rajneesh Mohan Verma, Dy Director, JTRI-Lucknow

Vigilance Officers at the Conference

Welcome address by Smt Rajashree Sharma, GM(Vigilance)

Session on Ethics and Moral Values by Shri Ashutosh Kumar Sinha, IIM-Lucknow

24th Vigilance Officers' Conference at Lucknow, Day-2

Shri R Madhavan, CMD-HAL addressing Vigilance Officers

Shri Sajal Prakash, CEO-AC being welcomed by GM(Vigilance)

Plantation of saplings by CMD-HAL & CVO-HAL

Team Vigilance participated in "save the earth" campaign

Yoga Session during Vigilance Officers' Conference

Best Complex trophy presented to Accessories Complex, Lucknow by CVO

Best Division award presented to Helicopter Division by CVO

Vigilance Study Circle - Bangalore

CVO-HAL Inaugurates Seminar organised by Vigilance Study Circle

Dignitaries on the dais during the program

Case Study presentation by Shri Suresha Prasanna V K, CM(Vig)-LCA Tejas Division

Case Study presentation by Shri Renjith R, SM(Vig), HAL-Corporate Office

Vigilance and Cyber Security for Good Governance

Shri M Gopalakrishna, IAS(Retd.)
(Former Chairman, REC and SCOPE)

Introduction

In the wake of the Second World War, Hindustan Aeronautics Limited was established in 1940 at Bangalore, primarily to service Aircrafts and keep them combat ready. Hindustan Aeronautics Limited has grown over the last seven decades in the service of the nation. It has built for itself a good reputation and has become synonymous with quality and reliability. It is meeting the fast changing technological needs of the defense forces and is now capable of building customized sophisticated aircrafts. It has been exporting to many countries by mastering technology in the construction of aircrafts, matching it with requisite avionics and equipping it with latest sophisticated missiles. It is now a synonym for reliability, safety and quality. Having become a world class player, it has to follow the Olympic motto of CITIUS, FORTIUS and ALTIUS. CITIUS i.e., faster towards the goal, FORTIUS - stronger in determination, and ALTIUS - higher in your aspiration to reach your goal. Today, it is not the sky, but space that should beckon HAL to fly beyond barriers and be future-ready.

A Competitive HAL

The reputation of companies among competitors is built, when the products they supply are 'better' in quality, 'faster' in the delivery, 'cheaper' in price, 'safer' in operation, 'secure' in service and becomes a preferred, customized supplier of tomorrow's technology today!

Hindustan Aeronautics Limited has to prepare today for the needs of tomorrow by mastery of technologies and overcome the challenges of productivity and price. The Technology has both a 'positive' and 'negative' affect. Technology can be the "leading edge" of the Company or it can be the "bleeding edge" much like the helpful surgeon's knife or a Sword which dooms the wielder. An old Indian saying says

चिन्तनीया हि विपदां आदावेव प्रतिक्रिया।
न कूपखननं युक्तं प्रदीप्ते वह्निना गृहे ।।

It is not wise to sink a well when the house is engulfed in flames, the solution of a crisis must be thought upon before it arises.

Change Management

Change is continuous and is the way of life and progress in the world. The problem is not the 'speed' of change but the 'slowness' of our response to change. The world today is faced with the problem of "VUCA", i.e. Volatility, Uncertainty, Complexity and Ambiguity of events. We need anchors amidst such turbulent times like Vigilance, Cyber security and Good governance.

Vigilance

Vigilance is a time-tested anchor. Since technology is moving fast, our responses to technology must be faster by anticipating issues and being prepared for the worst. It is here that vigilance acquires importance. Vigilance is like a compass in one's hand, to set the direction of change and a 'clock' in the other hand to measure the progress achieved towards the goal. Constant review of our goal, direction and progress is necessary to meet the challenges of the future.

Cyber Crimes

With the fast-changing IT scenario such as AI, data analytics and growth of cyber crimes, we need to be alert and build suitable firewalls to prevent breaches of trust and quickly block or close them. Better is still to eliminate them before they cause damage. Of late, there has been an increase in the number of threats and software vulnerabilities all over the world. Breaches result in loss of trust and on many occasions, loss of funds and more importantly reputation and loyal customers. Of late, many frauds have taken place through the medium of the Information Technology which takes advantage of either the ignorance or the innocence of the person in-charge in responsible positions and actions. This is particularly true in case of introduction of computerized tools like ERP, SAP etc. Most crimes relate to procurement, accounting, inventory management, pay bills and contractor bills. The task therefore becomes a 24/7 exercise. If cyber criminals are razor-sharp, we must become laser-sharp. We must be not only the best, but 'better' than the best.

Constant Vigilance needed

The Central Vigilance Commission, Transparency International and the institution of Independent External Monitors and our CVOs have all been cautioning and impressing on us the importance of 'predictive' vigilance, 'preventive' vigilance, 'protective' vigilance, 'detective' vigilance and 'investigative' vigilance and lastly 'punitive' vigilance.

Corruption

Like corrosion in metals there can be corrosion of minds. Corruption simply put is: "the use, abuse and misuse of position, office, status or authority for personal gain or benefit".

Our companies must make swindlers realize that corruption, whether of money, men or morals, software or hardware must be converted from "Low risk - high reward" situation to a "High risk–no reward and long imprisonment". Management must have a hawk's eye on matters which are not in the ordinary course of business and not at arm's length. This requires a 'participative' type of vigilance where every employee of the company considers himself a vigilance officer. This needs management's involvement and holding of periodical meetings with officials to train and update them about the latest tools, techniques and technologies that are suitable and appropriate for the company.

A team of in-house experts should be constituted to prepare dashboards and checklists in matters of concern. It is advisable to test internal financial controls and conduct regular forensic and cyber audits to prevent malpractices.

Chief Risk Officer

Many companies appoint a Chief Risk Officer who prepares and implements a Risk Management Policy. He should note points of concern and give clear instructions. To prevent frauds or stealing of technology or trade secrets, the latest ISO Standards and instructions from Transparency International, the United Nations, EU Commission and other organizations must be studied and followed. India is considered a store house of Information Technology. We should, therefore, setup an inviolable software. Our risk policy and software must become an international practice.

Good Governance and Vigilance

Good Governance has now become the touch-stone of international companies and adherence to good practices a universal requirement. Vigilance is part and parcel of good governance. Governance is a higher form of administration which is better visualized and explained by the acronym "SMART" meaning that Governance must be Simple, Moral, Accountable, Responsible & Responsive and Transparent. It has to be based on the eternal values and ethics of Truth, Trust, Transparency, Tolerance, Tact and Technology.

Pre-requisites for Good Governance

The Indian State Motto says "Satya Meva Jayathe" - Truth alone triumphs. Trust is built by truth and the value of responsibility. Transparency is openness and objectivity. Tolerance is Sahanam. Indian Value considers 'Sahanam Eva Samskriti' i.e. Tolerance is Culture. Tact - one has to be tactful while handling facts and action. 'Tact' to put it bluntly is to say "do not get into trouble, but if you get into trouble, know how to get out of trouble quickly". The last 'T' is technology; which is important for utilizing technology for the correct purpose, in the correct way, by the correct people in the correct

process. This can help us to take advantage of the leading edge and eschew the bleeding edge. We have to be careful with the selection and use of technology along with the precautions that must be taken for the use of that technology.

Employing the correct technology requires us to follow the simple principle of 'H-H-S-T-N' - for success. It involves "Home Work", "Hard Work", "Smart Work", "Team Work" and "Network" both within the organization and outside. The common word is 'Work'! Without disciplined and focused work, no objective can be achieved or success assured. The staff must be imbued with the spirit of the 3 'E's - Excel oneself; Exceed the expectations; and Expand your horizons of thinking and action. The decisions of today are the actions for tomorrow.

For ensuring Good Governance and fail-proof vigilance, we must master cyber technology and conduct periodic forensic audits. The company, in short, has to "EMBRAIN" the concept, "EMBODY" the content, "ENCODE" the context, "EMBED" the connectivity and "ENCULTURE" the important aspects of vigilance and cyber technology and make every employee, a vigilance officer cum whistle-blower who draws our attention.

Technology is now moving from the computer to the cloud and to space. It is like a limited Company moving to avail unlimited opportunities. It is continuous value addition that ensures growth. Let us fulfill that task in HAL and make India proud.

To conclude, I will recall the prophetic words of the Takshasila University of yore which gave the mantra 'Asma bhava Parashu bhava Hiranyasthrani bhava' - Be as strong as a rock in your determination, Be as sharp as a battle-axe in your intellect. In the war of life, if the battle-axe gets blunted, go back to the hard rock of your determination and hone it extra-sharp so that you can fight one more battle and win the war of life. These are the golden weapons of our armory. Let us fortify our resolve and use our intellect for excellence in all our endeavors.

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(सर्वे भवन्तु सुखिनः)

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(The author of this article joined, the Indian Administrative Service (IAS) in 1962. He retired as Chairman of Rural Electrification Corporation in 1997, in the rank of Secretary to Government of India. He held many senior level positions in the Government of India and various State Governments during his tenure, such as

- *Chairman, SCOPE, (the Standing Conference of Public Enterprises), the apex body for 246 Public Sector Undertakings under Government of India,*

- *Special Chief Secretary to Government of AP and also as Senior Consultant to UNDP, ADB and DFDI.)*

CVO visiting manufacturing facility at Korwa Division

CVO visiting manufacturing facility at Lucknow Division

Technology to Eradicate Corruption

Shri D Maiti, CEO-MiG Complex, HAL

What is "Corruption"? There are many definitions and ways to describe or define "Corruption". As per general understanding the term corruption is synonymous to the terms fraud, bribery, settlement etc. The more precise way of explaining corruption may be as "exploitation of public positions for private benefits".

No matter how we define or understand corruption, it is a fact that corruption hampers economic development, weakens the country and has a disproportionate impact on the poor and most vulnerable by aggravating the inequality, poverty, social division and environmental crisis and reducing access to services, including health, education and justice.

The phenomenon of corruption is prevalent in both First and Third World Countries, however it is more widespread in the latter group. The World Bank considers corruption a major challenge to its twin goals of ending extreme poverty by 2030 and boosting shared prosperity for the poorest 40 percent of people in developing countries.

There can be many reasons for presence of relatively more corruption in developing countries than the developed ones and extensive utilization of technology by developed countries is one of the major factors for the same.

The word "corruption" is often associated with high-profile cases like big scams, but everyday petty corruption is the most rampant. Its omnipresence has normalised it to the extent that we see it as a minor inconvenience, a necessary evil to get the job done. This practice of petty corruption is the one that slowly eats away at the system day by day.

One of the simple reason for petty corruption to occur is that citizens do not have complete information. However, if citizens are given access to complete information, they can hold the institutions and governments accountable. The Right to Information Act 2005 is a classic example of how citizens can monitor and hold governments accountable if they are given access to information.

Technology can further scale this very idea and that too in a cost-efficient way, as there is substantial penetration of smart phones and internet in even the remote parts of the country. institutions can leverage technology to make vital information regarding public services readily available in the public domain to improve transparency.

Complex procedures are cumbersome and typically lay the ground for corruption. Technology can cut red tape through automation of bureaucratic processes. With no opportunities for face-to-face interactions between citizens and public officials, digital/ online processes substantially reduce the opportunities for soliciting or accepting bribes. A very good and recent example of this kind of automation and simplification of procedures is the Road Transport Offices (RTOs) where many services are made online including issuing challans and collecting fine. Some of the RTOs are even going to adopt Automated Driving Test Tracks for driving license tests. Similarly, the simple and user friendly online passport application process and train ticket booking has helped to eliminate agents and middle-men to great extent.

Government of India, in pursuance of its commitment to "Zero Tolerance Against Corruption" has taken several technological measures to combat corruption which, include:

a. Disbursement of welfare benefits directly to the citizens under various schemes of the Government in a transparent manner through the Direct Benefit Transfer initiative.

b. Implementation of E-tendering in public procurements.

c. Introduction of e-Governance and simplification of procedure and systems.

d. Introduction of Government procurement through the Government e- Marketplace (GeM).

The Direct Benefit Transfer (DBT) schemes of the Government significantly eliminated intermediaries, with the combination of Jan Dhan account, Aadhaar and Mobile. This also made it easier to detect and deter fraud risks and therefore, prevented leakages in the system. Introducing digital processes in tax filing (both Income tax and GST) has also helped reduce tax evasion. It has minimised the face-to-face interaction between taxpayers and tax officials, bringing greater transparency to the process.

Information and Communications Technology (ICTs) is increasingly seen by governments as well as activists and civil society as important tools to promote transparency and accountability as well as to identify and reduce corruption. The technology, in the form of websites, mobile phones, applications etc., have been used to facilitate the reporting of corruption and the access to official information, to monitor the efficiency and integrity of social services and to make financial information more transparent.

To summarize the areas where ICT can play an imperative role, we can take cues from the Swedish Program for ICT in Developing Regions as given below:

- Automation,which can reduce the opportunities for corruption in repetitive operations.
- Transparency, which can help reduce the room for discretion;
- Detection in operations, to identify anomalies, outliers and under performance
- Preventive detection through monitoring of networks and individuals;
- Awareness raising to empower the public and inform it about its right to resist arbitrary treatment;
- Reporting, to create complaint channels that can lead to concrete action and help punish violations and close loopholes;
- Deterrence, by disseminating information about reported cases of corruption;
- Promoting ethical attitudes through public engagement and online discussions.

While implementing the ICTs, in order to improvise, we can also study/analyse similar programs implemented by other developing Countries. *Trade Route Incident Mapping System (TRIMS)* in Nigeria: a crowd-sourced whistle blowing system which allowed truckers and small traders stuck at border check points (some real, some artificial, set up to harass and extort bribes) to report corrupt officials using a mobile phone. There may have been no direct link to officials being punished, but there were stories of a deterrent effect: some truckers mentioned TRIMS and they were let go without being harassed for bribes.

The technological landscape is mutating at a very fast pace with new technologies making their way such as Artificial Intelligence, Big Data, ITC linked whistle blowing tools, Distributed Ledger Technology (Block-chain), Data Mining etc. resulting in network based monitoring and control devices, smart management systems, AI based audio-visual processing and transmission systems, transparency portals, neural networks etc. These technologies are being increasingly used worldwide and present a very strong potential to push forward the anti-corruption agenda through revolutionizing methods of corruption detection, prevention and analysis.

For example, simple tools of Information and Communication Technology such as mobile phones, social media, online news can contribute to the fight against petty as well as grand corruption by drastically lowering the cost of coordination and information exchange within (civil) society and can also be used as a whistle-blowing tool. Nevertheless, ICT tools such as social media also carry the risk that false and confusing information might be spread. This is where Artificial Intelligence

(AI) comes into picture. AI technologies, such as neural networks, are learning algorithms which infer patters and relationships from large volumes of examples in order to best achieve pre-set goals. Their ability to quickly predict and uncover hidden relationships make them valuable in analysis and decision making and also in corruption risk red flagging.

This proliferation of technology has the potential to create unparalleled opportunities for transparency and anti-corruption. However, technology is not a quick fix or fast solution. To truly harness these trends, Governments and organizations have to be quick to adapt and to act. In some cases, financial and technical investments in innovation will be required at all levels to make these changes happen, coupled with public and private sector collaboration to help officials and agencies make the leap towards new technologies.

While adapting the new technologies, the most important thing to keep in mind is that technology can only be leveraged to tackle corruption if the larger population is equipped with the skills to use it. Despite means to access information, many mobile users in rural India do not have the capability to access essential information.

Hence, there is also a need to further augment the digital literacy across the rural landscape. Digital literacy programmes like the Pradhan Mantri Grameen Digital Saksharta Abhiyan (PMGDISHA) is the concrete step in this direction through which digital literacy training programs are being conducted pan India with focus on rural region. I will conclude with the quote of our Honourable Prime Minister Shri Narendra Modi "Let's Make one person in every family Digitally Literate".

(The Author of this article holds M.Tech Degree from IIT. He joined HAL in the year 1985, worked in various divisions of HAL in various capacities and presently working as CEO- MiG Complex.)

Moral Story

There was a boy named John who was so lazy, he couldn't even bother to change his clothes. One day, he saw that the apple tree in their yard was full of fruits. He wanted to eat some apples but he was too lazy to climb the tree and take the fruits. So he lay down underneath the tree and waited for the fruits to fall off. John waited and waited until he was very hungry but the apples never fell.
Moral : Laziness can get you nowhere.

शुद्धता, धैर्य और दृढ़ता सफलता के लिए तीनो आवश्यक हैं

- स्वामी विवेकानंद

VIGILANCE LECTURE SERIES

Session on "Value based approach to change-making" by Shri Venkatesh Raghavendra, Social Entrepreneur & Philanthropist on 07.07.2022

Session on "Ethical Values & Integrity" by Ms Rashmi Bharti, Co-founder of AVANI-Kumaon, Uttarakhand on 20.06.2022

Session on "Need to stand up" by Shri Uday Balakrishna, IPoS (Retd) on 29.08.2022

निरंतर सीखते रहना ही जीवन का मूल मंत्र है रुक जाना मृत्यु समान है

– स्वामी विवेकानंद

Cyber Security – Issues & Challenges

Shri Venkatesh Murthy K, Senior Director, Data Security Council of India

Introduction:

Cyber security is no longer solely a worry for an organization's IT department. As ICT is increasingly integrated into all organizational process, it is imperative that IT Systems, IT security, and risk professionals collaborate to combat cyber threats and safeguard enterprises.

Criminals are considerably less interested in financial institutions and governments, which were historically their main targets. With the majority of companies now linking their operation to the internet, the threat is now global, giving hostile actors fantastic opportunities to take advantage of the weakness. As per Gartner report, by 2023, 75% of organizations will restructure risk and security governance to address the widespread adoption of advanced technologies. A resilient cyber security strategy is essential to running the business while protecting against security threats and preventing data breaches and other cyber security threats.

The current pandemic has contributed significantly to the rising instances of cyber-attacks. Threat actors have taken the advantage of increased adoption of online activities including the work from home. The security environment that existed in the office can never be compared with the home security. Since the pandemic began, the FBI reported a 300 % increase in reported cyber crimes. As reported by Business insider, Google is now blocking an average of over 18 million corona virus email scams per day along with 240 million daily spam messages 27% of covid-19 cyber attacks target bank or healthcare organizations and COVID-19 is credited for a 238% rise in cyber attacks on banks in 2020.

In addition to creating new ransomware variations, ransomware authors often offer ransomware as a service (RaaS). While encrypting vital and necessary workloads, new ransomware strains are also capable of identifying other data backups, avoiding endpoint protection solutions, conducting data exfiltration, avoiding sandboxing programmes, and deleting backups.

As crypto currencies have grown in popularity, ransomware attacks have increased exponentially.

The difficulty of tracking crypto transactions makes it more difficult to pinpoint who is behind ransomware operations. To counteract ransomware threats and prevent being the next target of a cyber attack , organisations must recognize that their systems are always susceptible. As a result early detection, a rapid response, and proper action are crucial to combating the number and intensity of attacks.

Cyber security is an essential but usually misunderstood part of enterprises technology infrastructures. Keeping up with the rapid evolution of cyber risk is extremely difficult for corporate cyber security. Business hold the view that we will be safer if we spend more money. The effectiveness of a company's information security programme, however, does not appear to be correlated with cyber security investment (as a % of overall IT spending).

Both the frequency and severity of cyber crimes are steadily increasing. The top three cyber attacks that organisations should be concerned about are ransomware, social engineering, and insider threats, according to research studies conducted by numerous institution. Since effective cyber security requires a combination of people, processes, and technology, it is a well-established reality that cyber attacks on IT infrastructure cannot be halted with a single tool or solution. This implies the necessity for organization to increase their cyber resilience policies, procedures and standards.

India recorded 50,035 cases of Cyber crime in 2020, with a 11.8% surge in such offences over the previous year, as 578 incidents of "fake news on social media" were also reported. According to the National Crime Records Bureau (NCRB) data, the rate of Cyber crime (incidents per lakh population) in India has increased from 3.3% in 2019 to 3.7% in 2020.

Cyber Security initiatives taken by Government of India:

i. Government of India has established National Critical Information Infrastructure protection Centre (NCIIPC) for protection of critical information infrastructure in the country.
ii. The Indian Computer Emergency Response Team (CERT-In) issues alerts and advisories regarding latest cyber threats and countermeasures on regular basis.
iii. Government has issued guidelines for Chief Information Security Officer (CISOs) regarding their key roles and responsibilities for securing applications / infrastructures and compliances.
iv. All the government websites and applications are to be audited with respect to cyber security prior to their hosting. The auditing of the websites and applications are conducted on a regular basis even after hosting.

v.   Government has empanelled private & government security auditing organisations to support and audit implementation of Information security Best Practices.

vi. Government has formulated Crisis Management Plan for countering cyber-attacks and cyber terrorism for implementation by all Ministries / Departments of Central Government, State Governments and their organisations and critical sectors.

vii. Cyber security mock drills and exercise are being conducted regularly to enable assessment of cyber security posture and preparedness of organization in government and critical sectors.

viii. Government has launched the Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre). The centre is providing detection of malicious programs and free tools to remove the same.

ix. Government has set up National Cyber Coordination Center (NCCC) to generate necessary situational awareness of existing and potential cyber security threats and enable timely information sharing for proactive, preventive and protective actions by individual entities,

Cyber Security - Issues & Challenges:

It is important to keep in mind that security and privacy are design considerations while creating any IT systems. A system developed for security makes surveillance more difficult, and a system built for convenience makes surveillance more easy. The overall principle in this situation is that systems should be designed to require the least amount of surveillance to function, and when surveillance is necessary, it should only collect the minimal amount of data and retain it for the shortest amount of data and retain it for the shortest amount of time. This would ensure a balance between the interest of the nation and personal privacy.

Universities and academic institutions play a major role in research and development that helps the nation be better prepared for cyber security. Academic researches should consider strategies for applying effective research while developing concepts and beginning study.

The academic community should consider making significant investments in the creation of specialized cyber security skills required for innovation. Through specialized academic projects and activities, universities can inspire students to consider security technology.

To entice and recruit new talent and maximize workforce involvement, organizational leaders should take initiatives to create an inclusive organizational atmosphere in cyber security. Information system security is a major responsibility of the IT sector.

Critical infrastructure is necessary to support the essential elements of our daily lives. Our societies are supported by a highly developed and intricate network of infrastructural systems. In recent years, a number of high profile cyber attacks have exposed vulnerabilities in even most advanced countries critical information infrastructure. In order to fill gaps in the country's key infrastructure systems and to work with the public and private sectors, it is essential to defend the nation's overall interest.

The most significant issue we need to address in the coming days is the rapid growth of several advanced persistent threat groups, some of which have evolved into extended and virtual arms of nation-states and are causing significant harm to the Critical Information Infrastructure (CII).

To combat massive cyber attacks and cyber terrorism, nations must create national plans. During an attack, the plans should make it easier for different authorities and stakeholders to coordinate. Such plans are already in place in a lot of countries, but a lot of other countries don't. Additionally, coordination at the regional and global levels is required to combat massive cyber attacks and cyber terrorism.

Anonymity & Pseudonymity

User of the Internet have the option to remain anonymous or use a pseudonym by default. Promoting free speech is always related with anonymity. On the internet, many people prefer to use pseudonymity or anonymity for a variety of reasons, some of which may not always be malicious. To hide the user's identity, the ToR browser routes traffic via a network of hundreds of different computers severs.

Vint Cerf a senior executive at Google, who is also named as the father of the internet opines "Anonymity and pseudonymity are perfectly reasonable under some situations, but there are cases wherein the proceedings both parties really need to know who are we talking. So what I'm looking for is not that we shutdown anonymity, but rather that we offer an option when needed that can strongly authenticate who the parties are,"

Anonymity in cyberspace has to be an option for a person who uses it and at the same time to those who dispense with him.

Underground economy

The rarity or to examine the technological competency is no more exciting to computer hackers. Hacking has become a completely monetized activity and business is thriving. According to a research report published by Rand Corporation, an 80 percent of hackers are now working with or as part

of an organized crime group. The emergence of dark net (e.g, Tor), anonymity and cryptographic features have become a barrier to understand the underground economy. Narcotics drugs deals, IP theft, human trafficking, counterfeit goods, child pornography identity theft, wildlife smuggling form the big business in the cyber space.

Despite law enforcement agencies actions to breakup and close down various underground places like silk Road market/ Carder. Su, the criminals have proved to be rather lively.

Way Forward:

Few suggestions for the organisations in improving their cyber security preparedness includes:

i. Cyber security must be incorporated into all early-stage company decisions as part of proactive cyber risk management.

ii. Differentiating assets for varied levels of cyber security is known as risk oriented prioritising.

iii. Investing in human defenses means making sure that the organization's commitment in cyber security extends beyond technological aspects to staff awareness, education, and training initiatives.

iv. Evaluations of steps for reducing online exposure through business associates.

v. Developing incident response policies and procedures focusing on mitigating potential risks when breaches occur.

(The author has over 17 years experience in cyber crime investigation training and digital forensics. He is an alumnus of IVLP program of US Department of state on the topic "Linking Digital Policy to Cyber crime Law Enforcement". He works as Senior Director at Data Security Council of India (DSCI).)

Moral Story

One hot summer day, a Stag went to a pool to drink water. The pool water was clear. It could see its reflection in the water. It felt proud of its beautiful horns. But when it saw the shadow of its thin legs, it felt sad and hated them. While it was still thinking of its ugly legs, it heard the sound of the horse's hoofs of a huntsman and the barking of hounds. It ran for its life as fast as its legs could carry it. In no time it left the hounds far behind. Now it happened to pass through a thick forest. As it rushed through, its horns got caught in the branches of a tree. It struggled hard to free itself but all in vain. Meanwhile, the hunter and his hounds came chasing it. The hounds fell upon it and killed it- The legs it hated had carried it away from the hounds while the beautiful horns brought about its death.

Moral : All that glitters is not gold.

QUIZ

1. The full form of PIDPI is _____

2. The PIDPI resolution was passed in the year _____

3. _____ is the designated agency, to receive written complaints under PIDPI.

4. PIDPI complaints should be addressed to _____

5. The envelope containing the PIDPI complaint should be superscribed with _____

6. The PIDPI compliant should be in _____ envelope.

7. Central Vigilance Commission does not entertain _____ complaints.

8. In order to protect the identity of the person, the Commission will not issue any _____ to the complainant.

9. _____ department will not insist name and address of the sender for envelopes addressed to CVC and marked as PIDPI.

10. Only complaints against _____ officials will be taken into cognizance under PIDPI.

Moral Story

Once a farmer had three grown-up sons. They always quarreled among themselves. Their father advised them to live in peace but it had no effect on them. He was worried about their future. One day the farmer fell seriously ill. He sent for his sons. He asked them to collect a handful of sticks which they did at once. He tied the sticks into a bundle.

Now, he asked them to break the bundle one by one. They tried hard to break it but none could. At last, the farmer untied the bundle and asked each of them to break each stick. They did so quite easily. Their father said, "My dear sons, you could not break the sticks as long as they remained tied together but you broke each single stick quite easily. They were strong in bundle but became weak when separated from one another. Never forget that united we stand and divided we fall." Inspirational Moral Stories for Adults

This had a deep effect on the farmer's sons. They gave up quarrelling and began to live in peace.

Moral: United we stand and divided we fall.

Inauguration of Integrity Park by CVO at HAL Township, Avionics Division, Hyderabad on 15.07.2022

Visit to SU30 Radar facility, AD, Hyderabad on 14.07.2022

GM, SLRDC briefing about SLRDC designed products to CVO on 14.07.2022

I measure the progress of a community by the degree of progress which women have achieved.

Dr. B R Ambedkar

Building a Corruption free Nation

**Shri A.B. Pradhan, GM(HR),
Bangalore Complex, HAL**

Corruption is a form of dishonesty which is undertaken by a person or an organisation which is entrusted in a position of authority, in order to acquire illicit benefits or abuse power for one's personal gain.

Corruption erodes trust, weakens democracy, hampers economic development and further exacerbates inequality, poverty, social division and the environmental crisis.

Realising the cancerous effect of corruption, when the United Nation established the Sustainable Development Goals in 2015, has considered "substantially reduce corruption and bribery" as one of the outcome target.

India is not out from the clutch of this social evil. This social and economic problem is the most detrimental force to the national progress and prosperity. A survey conducted by the Transparency International in 2021 found that India ranked at 85 among 180 nations in the Corruption Perception Index (CPI). Rampant corruption in India has damaged the economy and further stunted its development for decades, thereby preventing our nation from reaching new heights.

Now the question is how to prevent Corruption? One of the simple answer may be change of mindset of all of us. Generally, the word "corruption" is often associated with the high-profile cases like the 2G scam or the fodder scam, but the everyday petty corruption is the most rampant. Its omnipresence has normalised it to the extent that we see it as a minor inconvenience, a necessary evil to get the job done.

In this regard, use of technology may be a useful tool. Technology has played a significant role in the decline of such a perception of corruption amongst the people. The role of technology is a very significant one in the constant fight against the evil of corruption at various levels. Due to the advent of technology and the government's concerted efforts and enormous investments, the nation is successfully fighting and getting rid of this evil.

Technology has become an integral part of our life by bringing with it a vast number of benefits, making us more creative, productive, and innovative. This productivity and innovation along with the technologically boosted creativity of humans have proven to be extremely helpful for our nation in tackling an issue that plagued our nation ever since it got independent, i.e. Corruption. Few examples are as below:

i.   If we talk about the level of ordinary citizens, technology has been an empowering factor. Most of the ordinary citizens in our country today possess a smartphone, which has become a really common device. The presence of this device, although so common, is a major deterrent to corruption. The fact that it can be used to record wrongdoings and corrupt officials has deterred many from indulging in such activities.

ii. Further, there are also many applications that users can download on their smart phones to report corruption that has further empowered the citizens against this menace.

iii. Even Social Media which is one of the most effective tools of technology has contributed a lot to fight against corruption.

iv. Corruption at lower levels has also been reduced by the incorporation of technology. Earlier when the enforcers of rules who accepted bribes to let go of those who violated the rules, the advent of technology today in extracting fines (E-Challans) has ensured that rules are properly enforced and followed.

v.   The promotion of cashless transactions has also ensured that all transactions between people are recorded and there is nothing dealt with under the table or no commission from the innocent citizens.

vi. Another very positive implication of technology is the government's DBT (Direct Benefit Transfer) system, which coerces the middlemen (if any), who exercised the power to disburse benefits to the people.

vii. Technology is being used to create transparency across organizations by increasing automation, accuracy and frequency across processes. International organizations are at the forefront of this revolution developing innovative software to detect and deter fraud and collusion. More accessible and better-quality data also lead to improved policy decisions and greater accountability.

viii. In the public and private sector, various tools such as Self-Monitoring, Analysis and Reporting Technology (SMART) are being employed to combat corruption risk. Along with technological advances, these tools are increasingly sophisticated enough to handle data velocities as they can involve real-time analysis of transactions, predictive modelling, anomaly detection and risk-scoring algorithms.

ix. Effective e-governance is also seen as a solution to curb corruption. It can be asserted that e-governance is the need of the hour for the nation.

x. e–auctions and e–procurement platforms can also help in moving towards cleaner procurement systems by controlling kickbacks. With their fair bidding systems and transparent structures, these systems do away with the collusion and graft in public procurement. Further, it gives advantage of creating an open market and stronger economy. Business and citizens can obtain information at a faster speed and it is possible at any time of the day.

xi. Crowd sourcing is another tool for fighting corruption. Various websites known as crowd sourcing sites or platform allow people to share their views, experience. People can also reports corruption through these platforms.

xii. Information and Communication Technology (ICT) is a diverse set of technological tools and resources used to transmit, store, create, share or exchange information. ICT can support anti-corruption in a variety of ways. It can enable the promotion of transparency, accountability and also citizen participation. The Program for ICT in Developing nations has prepared a list of the possible areas in which ICTs can help combat corruption:

    a. Automation: which can reduce the opportunities for corruption in repetitive operations.

    b. Transparency: which can help to reduce the room for discretion;

    c. Detection in operations: to identify anomalies, outliers and under performance

    d. Preventive detection through monitoring of networks and individuals;

    e. Awareness: to empower the public and inform it about its right to resist arbitrary treatment;

    f. Reporting: to create complaint channels that can lead to concrete action and help to punish violations and close loopholes;

    g. Deterrence: by disseminating information about reported cases of corruption;

    h. Promoting ethical attitudes through public engagement and online discussions.

To conclude, our vision should be building a nation in which government, politics, business, civil society and the daily lives of people are free of corruption. To end corruption, we should promote transparency, accountability and integrity at all levels and across all sectors of society, for which technology can play a vital role.

(The author of this article holds BSc (Hons), MA (PM & LW) and LLB degrees from Utkal University, Odisha. He joined HAL in the year 2005, worked in various divisions of HAL in various capacities and presently working as General Manager(HR)- Bangalore Complex)

Awareness sessions at divisions

Session at RWRDC on Complaint Handling Policy & PIDIPI by Shri Mani Bushan, AGM(HR)-F&F on 23.06.2022

Session at MRO Division on Standing Orders & APRs by Shri H N Kumaraswamy, CM(V) on 27.05.2022

Session at TTI on PIDPI / APR/ Standing Orders for employees of Helicopter Division by Shri Kishore Nagdev, CM(V) on 10.06.2022

Session at Aircraft Division on Disciplinary Proceedings by Shri Prateek Kulshreshtha M(V) on 06.08.2022

Session at MCSRDC on Vigilance-an overview by Shri Devendar Singh M(V) on 06.08.2022

Vendor meet through video conference at RWRDC on 25.10.2021

Leveraging Technology and Digitalisation Effort in HAL

Shri S.M. Jena, GM(IT), HAL

Preventive vigilance mainly aims at reducing the occurrence of a lapse like violation of a law, a norm, or broadly speaking a governance requirement. At a macro level, the correlation between digitalisation and corruption is well established. Digitalisation can disrupt corruption by reducing discretion, increasing transparency, and enabling accountability by dematerialising services and limiting human interactions. Leveraging Technology is the key in developing such governance mechanism. Furthermore, it allows for more effective oversight by smarter institutions like Vigilance and System Audit Departments.

Today, Information Technology (IT) has become an integral part of our lives by bringing vast number of benefits. Productivity and innovation along with the technology have proven to be extremely helpful for our organization in tackling issues like corruption while improving vigilance to prevent corruption. IT has become an empowering factor due to possibility of creating system driven processes built-in with business logics through digitalization that cannot be tampered. Development of various dashboard to disseminate information with regards to stages, lead time, pending days etc. has brought in transparency to organisations. This complements to the concept of "*deterring corruption is the best solution*." Further, using technological tools *to develop institutional trust* has become central theme in every organisation.

Data Analytics and Development of Dashboards to improve transparency

One important way digital acceleration is permeating the integrity space is through the use of disruptive technologies and data analytics as anti-corruption devices by integrity actors, within the organization. Digital technologies as anticorruption tools have brought in the concept of *Integrity-tech*, to prevent and investigate corruption. Smart use of data analytics is proving to be a game changer, as substantial increase and dissemination of data provide potent integrity drivers.

HAL Divisions have been developing various dashboards to monitor and improve internal efficiencies in various functions. Beyond the operational excellence, *dashboards are also means to provide*

transparency in systems by disseminating information relating to various stages of processes and activities to all stake holders. Such portals or dashboards also provide deep insight to lead time and delay thereby identifying areas and personnel responsible for necessary management intervention.

A *dashboard for monitoring indigenous payments* has been put in place for monitoring the status of *pending payments to vendors*. *MSME related pending payments* are separately monitored which aids in alerting the concerned Divisions and departments for clearing the payments within the timelines mandated by ministry for such payments. Similarly, a dashboard for depicting *status of pending invoices at Central Payment Processing Cell (CPPC)* is also in place providing age-wise number of invoices pending at different stages of payment such as voucher creation, creation of bank advice and updation of payment reference (UTR No.). Provision for viewing cancelled invoices helps division to investigate the reason and enact accordingly to rectify the problem before putting up for payment to CPPC.

Dashboard for e-file also has been created for corporate, complex and division levels for monitoring delays at various departments or officials. Similar portal has been centrally developed to monitor lead time of Budgetary Quotes as well as for tracking delays during various stages in the process by departments. Similar portals also have been developed by Divisions at local level by *Kanpur, Lucknow and Hyderabad for tracking LD against Customer Orders, Non Moving Inventory, and Payments Monitoring Dashboard etc.*

Online *dashboards for Leave, Attendance, and Medical Claims* etc. have improved transparency and compliance of HR rules. Compliance to manpower productivity measures as per workers wage revision 2017 has been possible by many Divisions due to *online system employee's movement portal*. Since employee movement is recorded and linked with salary and incentive, this has improved the discipline and productivity at workplace.

Digitalization of processes to improve efficiency, control and information security

Leveraging technology can entail automating procedures, expanding digital services, and reducing reliance on paper-based processes, therefore improving efficiency and reliability. Implementation of ERP in HAL and further integration of additional applications for various business processes have been the baseline for information system. This has given opportunity in creating greater transparency about services through development of dashboards and portals. Data is becoming an indispensable tool, which can be leveraged to build integrity and transparency in systems and processes.

Our aim is to capture, track and analyse every single transaction in business processes while making

individuals responsible for data ownership and process performance. *Anymanual mode between computerized processes can open the gate for manipulation*. Hence, IT Department strives for *end-to-end automation* to create clean, reliable and sustainable systems.

An initiative by *CO Finance* to bring in structural changes through institution of *Centralized Payment Processing Cell (CPPC)* has brought benefits in many aspects to the organization. Control in different types of payment has been achieved though implementation of Centralized Payments. There is complete *segregation between the roles* of payment initiation, payment advice and payment processing. All supporting documents for payment such as copy of invoice, note sheet etc. are uploaded by concerned Divisional user departments in ERP system and transaction logs are captured which eliminates chances of any malpractice. *E-Stamping* has also been introduced to ensure integrity of the documents maintaining ownership and responsibility. This is an example of an *end-to-end Order to Payment cycle automation.*

Company wide *e-file* usage percentage has been increased to 95% by the year end as compared to 65% beginning of the financial year 2020-21. This has ramped up digitalization activities ensuring responsibility and traceability. Even *digitalization of note sheet payments, Imprest and Petty Bill Entry System by Divisions and CPPC* is another step towards system driven approach of data accuracy and reliability.

An initiative by *CO-HR* to digitize and store all *Personnel Records of Employees* securely was successfully implemented at all the Divisions. The software has provision to upload, store and view documents and records by Divisional, Complex and Corporate HR with control of access as an instance for control of information on need to know basis. Tour proposal made online by few Divisions has brought compliances to policy and improved auditing of transactions. Online system for courtesy coupon approval by few Divisions has resulted in compliance of HoD/Dept wise courtesy expenditure control due to such IT based system only. Online Quarter application and allotment by outlying Divisions has also brought integrity and transparency in system. An IT system for *Assessment of Indirect Workmen for Incentive Payment* developed by Engine Division has proven to be an efficient tool to capture, store and track different stages. This concept is being undertaken to develop and rollout company wide for larger benefit.

A paperless software e-Financial Assistance Scheme (e-FAS) has also been developed and implemented for processing financial assistance to dependents of deceased employees. Capturing of requests, verification of entitlement and advice of payment is completely online thereby eliminating errors in payment and achieving transparency in the process. Similarly, paperless process for

Performance Related Pay (PRP) computation is a recent initiative which provides transparency in computation of PRP. This system facilitates online verification of PRP parameters by concerned department viz., HR, Finance and MSD of Divisions and Offices before forwarding online to Corporate Office, leading to minimization of errors. The final PRP amount is also displayed to individual officers in their Single Sign-on account.

Referential Integrity of Data to Build System Integrity

Advent of ERP and Process automation has given rise to *data integrity* concept. Once a data is entered and approved in the system cannot be changed. Subsequent activities need to reference such approved data while the system should disallow entry of any other data not in consonance with approved one. Relational Data Base Management System (RDBMS) like oracle has such capability of exploiting *Integrity Constraint* functionality. In addition, functions or procedures can be developed to verify consistency of entered data with respect to approved data.

You can't change or manipulate data in between when there is existence of reference data. For example, during creation of Receiving Report, the system fetches and matches data of reference Purchase Order. *Vendor bank account no, invoice amount, advance amount etc. flow automatically* to invoicing and payment process giving no room for manipulation. *Flow of MPR data and tender data to PO* also binds the parameters like part number, quantity etc. Triggers have been deployed across HAL Divisions to cap material issue quantity with respect to requisition quantity. *3-way matching of Purchase, receipt and supplier invoice amount* is another mistake proofing (Poka-yoke) methodology deployed to avoid likelihood of any mistake or data manipulation.

HR database is also extensively being used to *restrict access of ERP business process or data* based on active status of PB No. This is also used during e-file approval process besides online approval of leave, tour proposal, vehicle requisition, visitor pass etc. across all Divisions of HAL. *Online Time Revision Request (OTRR) System* by *Aircraft Division Bangalore* and *Online Monitoring & Control of Ceiling hours (SMH)* for all Projects by *Overhaul Division* are examples of system based controls to prevent any mistake (Poka-yoke) and data manipulation.

Encryption Mechanism to Improve Data Security

IT has capability to drastically improve security of transaction and information. All Product *Lifecycle Management (PLM) systems or Computer Aided Design (CAD) software* used by Designers at *ARDC, RWRDC, TARDC, AURDC and most other Design Centres* have system of encrypting the design data. *Digital Tender Opening System* for proprietary tenders developed by *Kanpur Division* has ensured

encryption and control of sensitive data to prevent likelihood of any information leakage. Use of *VPN technologyfor accessing Board agenda by Functional Directors* has not only brought down voluminous printing cost but also improved data security to great extent. e-file System noting is also completely encrypted. Encryption technology has lot of future scope in organizations like HAL. Creation of an *encrypted batch file for payment advice* at CPPC has capability to prevent possibility of any data manipulation.

Creation of Automated Alerts to Prevent Delay and Information Arbitrage

IT Systems are capable of creation of *automated alerts that prevents information arbitrage thereby eliminating scope of corruption*. Facility of sending automatic *email alerts and SMS to Vendors on release of payment* prevents personnel exploit information arbitrage. HSS login from another system is sent to the user for intimation. Alerts are being sent to users at every stage of e-file, MAT, PAR systems. Divisions have deployed many alerts in ERP using Groupwise Mail for prompt response.

Implementation of other technologies

As a fallout of pandemic during recent times, Covid-19 has forced organization to implement new technologies. All meetings, interviews and trainings are being conducted virtually through *Video Conferencing* (VC). This has significantly reduced the expenditure on deputation for HAL as a whole. As an offshoot, this has also reduced the carbon foot print due to travel minimization by way of adapting to new technology like VC as an alternative. Besides, VCs within the Division has also played significant role in running business during Covid-19 time and saving time and resources which were required for meetings. Similarly, installation of CCTV system in factory premises has worked as a deterrence against the possibility of theft and security by outsiders as well as insiders.

Improvements in IT Audit System

ERP being a major business enabler, periodic audit process for ERP is required to ensure that adequate controls are in place. In view of this, a *standard checklist of 108 points* was prepared and included in the IT Security Policy and Procedure Manual. These points are aimed at ensuring the ERP activities are carried out by persons having the right authority to perform the transaction, segregation of roles exists in transactions requiring financial prudence and avoid conflict of roles and rights. Checks and balances in the form of triggers/ reports are in place in financial transactions. Divisions & Offices to carry out annual ERP audit and same will be linked to quality certification of the Division.

An external ERP audit was conducted on the process for handling stocks in inventory and issue of raw material with shelf life to shop orders/work orders at 3 Divisions. *KANBAN/ Issue Slip Method*

for issuing material to shop floor location from the store location was introduced to avoid wastage and financial loss due to shelf life expiry of material at Shops. The material issue from the shop floor location can be done automatically using *BACFLUSH* option of IFS ERP during the store credit of the shop order. Using this mechanism, items with shelf life can be controlled and monitored being part of inventory.

Project Parivartan as an IT initiative across the Enterprise

Project Parivartan is a comprehensive Business Transformation initiative aimed at streamlining & standardizing business processes across the organization. The project envisages up-gradation of existing ERP – IFS Systems at HAL by infusing cutting-edge technology and global industry best practices so as to meet the challenges of evolving business scenarios. The implementation aims to maximise the coverage of business processes brought under the umbrella of process definition, digitalization and continuous monitoring. The solution configuration under finalization will establish a robust mechanism which removes chances of oversight or miscommunication, thereby reducing leakages and opportunities for fraud.

The upgraded ERP will facilitate implementation of Corporate Governance and Risk Compliance (GRC) Norms through system driven controls, checks & balances for achieving transparency, tighter adherence to regulations and statutory requirements in the financial transactions and operations. The proposed approach includes digital approval processes for most of the operational workflows like MPR, PO, Note sheets, associated administrative approvals etc. This will provide higher transparency on the decision making process and variables/factors considered in arriving at a specific decision. A centralized database with enterprise wide visibility will improve inventory planning with right quantity of procurement at right time and monitoring of life expiry, thereby reducing wastages and misappropriation.

A major necessity of the present is the ability of the organization to extend its boundaries through supplier/customer collaboration and build agility in its supply chain. The Supplier Relationship Management (SRM) and Customer Relationship Management (CRM) modules of the proposed solution is expected to achieve this. The SRM features will provide the suppliers a direct window to interact with the organization and ensure quick resolution of issues/queries. Effective monitoring of query resolution KPIs will ensure timely support to suppliers to deliver quality products and reduce conflicts among the supply chain partners and corruption through concessions. State-of-the-art features like requirement/capacity alerts, status exchange etc. will enhance visibility of the project/order, thereby reducing the need for emergency procurement action which may have chances of lapse/mismanagement. Adoption of such technology practices in all major domain of the business will provide greater transparency on information, processes & decision making and help HAL to prevent corruptions and malpractices.

Leveraging Technology and Digitalisation effort in HAL has already made a huge difference in combating petty corruption. In nutshell, HAL is leveraging technology as one of the most important tool to improve transparency, data accuracy and reliability while implementing more and more system driven end-to-end processes in order to increase transparency while preventing errors, human dependency and any possibility of corruption.

(The author of this article holds B.Tech (Electrical Engineering) from NIT, Kozhikode and M.Tech. from IIT, Chennai. He joined HAL in the year 1987, worked in various divisions of HAL in various capacities and presently working as GM(IT)- Corporate Office.)

Answers of quiz at page No. 24:

1. Public Interest Disclosure and Protection of Informer
2. 2004
3. Central Vigilance Commission
4. The Secretary, Central Vigilance Commission, Satarkta Bhavan, Block – A, GPO Complex, INA, New Delhi – 110 023
5. Complaint under The Public Interest Disclosure
6. Closed / Secured
7. Anonymous / Pseudonymous
8. Acknowledgement
9. Postal
10. Central Government

Moral Story

A tailor ran a shop in a town. He was a good-natured jolly fellow. A man in the town had a pet elephant. The elephant went drinking at a pool out of the town daily. It passed by the tailor's shop. The tailor gave him a bun every day. In course of time, they became good friends and were well pleased to meet each other. The tailor always waited for the elephant to come to him and the elephant was also there at the usual time. Inspirational Moral Stories for Adults

One day, the tailor had a dispute with one of his customers. He was feeling unhappy and cross. Meanwhile, the elephant arrived and put his trunk into his shop through the window to receive the friendly bun as usual. The tailor instead of giving a bun pricked its trunk with a needle. The elephant felt hurt at this but silently went his way to drink.

The elephant quenched his thirst and then filled his trunk with dirty, muddy water. It came back quickly, but its trunk in, and emptied it. The whole shop looked as if it was plastered with mud. All the fancy dresses and rich wedding robes were mud-stained and badly spoiled. The tailor was sad but it was too late.

Moral : We should always raise our voice against wrong.

CVO visits Engine & RWRDC Divisions

Visit to manufacturing facility at Engine
Division, Bangalore

Visit to manufacturing facility at RWR&DC
Division, Bangalore

Felicitation of skit team members by CVO

Felicitation of skit team members by GM(V)

Distribution of Certificate to student of Integrity
Circle by CVO

Responsible and Accountable Administration

**Shri Raju Nandkar, Deputy Collector,
Revenue & Forest Department,
Government of Maharashtra**

Responsible and Accountable Administrations -

Corruption is the abuse of entrusted power for private gains. Corruption is like a pest deeply rooted in our administrative system. The administration system links the government with the citizens. However, while linking, due to corruption, the expected benefits do not reach up to the last citizens. In the last several years, the government has come up with a number of measures to reduce or eliminate corruption. These include Information Technology, e-Office, Direct Benefit Transfer, Online Dashboard, Online Application System, PFMS, Online Complaint redressal system etc. However, despite such reforms, corruption is not diminishing. Naturally, the root of corruption lies in the mentality of the administrative system. If we need to change this type of mentality there is a need for collective and systematic efforts from top to bottom. The responsible and accountable administrations are the basic and fundamental characteristics of good governance. We need to incorporate and conserve these types of characteristics of good governance in the mind of the administrative machinery of our country to get rid of corruption.

The administrator is the political wing of any king in a monarchical or democratic system. The king or the people's representatives have a responsibility to govern the state. Although, administrations have existed since time immemorial, they have become intensive and extensive over time. It does not matter if the administrative system in our country today is a British gift to us. It is a well-known fact that the British ruled our country for a total of 150 years. Our country held independent elections on 15th August 1947 and our country became a republic on 26th January 1950. With some changes, we continued to keep the administrative system started by the British. Law and order, justice and the education system to some extent pre-existed. After independence, we have accepted the system of social welfare state, accordingly various types of departments and ministries have been created.

Various laws and regulations are enacted by the Government of India and the corresponding legislature. A law is a legal document containing a collection of various instructions on a particular subject i.e. Dowry Prohibition Act 1961 etc. The time when a comprehensive collection of instructions

on how to enforce a law is created is called a rule. Various developmental or socially useful policies are formulated by the government based on the agenda or policy of the government and the demands of the people. Policy deals with a particular subject. In this regard, an account of what is expected of the government and the government is presented. The policy serves as a guideline for the relevant department of government i.e. Women's Policy 2014 etc. A variety of programs and plans are drawn up for the implementation of these policies and as a matter of development as required. In implementing laws, rules, policies, programs and plans, the importance of how the administrative system has to be responsible, accountable, manage and safe has always been given importance.

The administration is a system for governing and it acts as a pyramid. In this system, policies, programs and plans are announced at the top level and implemented at the lower level. The upper level is the Ministry, various head offices, commissionerates, directorates, corporations head office, boards head offices, various institutions head office while the lower level is district, taluka, village, corporation, municipality, nagar panchayat etc. There are 61 subjects in the State List of the Constitution of India as well as 97 subjects in the Central List and 52 subjects in the Concurrent List. Administrative system is established through 52 Ministries of Central Government, 80 Departments, 83 Commissions / Committees / Missions / Corporations and approximately 38 Departments of each State. In general, 2 crore employees of the state governments and 32 lakh employees of the central government are working in this administrative system while implementing various policies of the government. Thus, while implementing various policies, programs and plans, the system is expected to provide corruption free administration. The corruption free administration is based on many pillars however, accountable and responsible administrations are the two major pillars.

Accountable administration means the administrative component of policy, program and planning and its actual implementation is responsible for its successes and failures. In more detail, accountable administration provides various benefits and services to the citizens within the stipulated time by carefully discharging the functions, duties and responsibilities assigned to them. This responsibility is as much collective as well as it is individual. If these functions, tasks, duties and responsibilities are not performed on time by the concerned or in a wrong manner, then there is a rule to assign responsibility for them. As a result, the law requires every element of the administration to behave with individual and collective responsibility in mind. However, this is not always the case.

In responsible administration, it is not understood that only the functions and duties have been fulfilled. Going beyond that, it is very necessary and essential to see and feel responsibility in our work. When it comes to shirking responsibility or avoiding responsibility, there is a general perception that there is no work; no mistakes, and no mistakes; no responsibility. The more irresponsible the

administration, the more office agents or consultants appear to have formed a new parallel non-officio bureaucratic and non-governmental pressure group. There are two types of work of a citizen in government office, which involves solving problems and difficulties and taking benefits of various schemes and services. Both of these tasks need to be categorized, but this does not seem to be the case. This wastes a lot of time of the citizens and creates their irritability and corrupt prejudice against the administration. In a democracy and republic, it is not unreasonable for the people to have such reasonable expectations from the administration. The chariot of the administration runs on the tax revenue given by them. Naturally, it is a feature of good governance to have expectations from the people and to fulfil those expectations effortlessly.

In administration, a citizen has to submit any work in the form of an application and with his signature i.e. identity. Naturally, in this age of information technology, such applications are submitted to the administration through various online platforms. Obviously, the first step of a responsible administration is to keep a record of such applications with the administration and to inform the concerned from time to time. The journey of application from the public takes place in three stages. Receipt to the applicant by taking note of the application received in the first stage. After that, the administration will take action on the second phase. The third step is to be made aware to the citizens of the action taken. However, due to discrepancies in the office records of the applications received, it takes a long time to complete the other two stages. Therefore, it is very important for the head of the office to be careful about the entry of applications and letters i.e. postal records. To give an example, if 1000 correspondences were received in a month, then the previous balance of 200 correspondences were matched in it so that 1200 correspondences were available for work in that month. Of course, the head of the office is expected to take at least a weekly review of the work done on these 1200 correspondences, but such a review is seldom done weekly or monthly. Although, this review is numerical, its importance is underscored in the heading 'Responsible Administration'.

It is necessary to first make a numerical match and then check the quality and work on it. For this, the head of the office has complete control over the inward and outward register, branch distribution register, work record register and collection register. However, it appears that the head of the office is trying to impose more control on the office subordinates without controlling their office records. Overall, this leads to controversy and bitterness, which naturally affects the common man more, and tarnishes the image of the administration. A responsible administration means that every element of the administration should take full responsibility of the decisions taken and the services rendered. An accountable administration has to be more sensitive than responsible administration.

Responsibility is not just measured quantitatively, it is measured qualitatively. It is necessary for the administration to take feedback from the citizens about the quality of the benefits and services they are availing from the offices. Responsible governance is characterized by the ability to communicate properly with citizens and to correct problems and errors found in feedback.

Administration has a working in a framework and is traditionally formed over a period of time. No one is trying to get out of this box easily. There is a sense of urgency in the work that is being done, the service that is being provided, the conversations that are taking place. It is always difficult for the administration to accept the change and innovation that comes with it. Of course, this requires capacity building by providing training in change management and government process engineering to the relevant unit of administration. Every element of the administration needs to be aware that they are responsible for everything they do and make decisions while working within the designated framework. The various decisions in the administration are facilitated through scrutiny and review at every level that makes accountability even more important to get rid of corruption.

Responsible administration is not one-sided, it is inclusive and collective. Responsibility is not only quantitative but also qualitative. Every element of the administration needs to be positive, active and work responsibly. Accountable administration is not only just providing benefits and services to the citizens. However, at each step the response and feedback of citizens need to be recorded. Every action and decision in the administration has to be taken in a people-oriented manner. In a democracy and a republic, the administration is accountable to the people. Overall, responsible and accountable governance is one of the key factors in establishing people-oriented and good governance and that should be corruption free. For this, every element of the administration should accept the attribute of responsibility and accountability.

(The author of this article is Dy Collector in Maharashtra Govt. and holding a charge of Officer on Special Duty at Vidhanbhavan, Mumbai. He holds degree of B.Sc (Agriculture), MBA (BII) and MA (Rural Development), ISTD. He has vast experience in administration and worked in implementation of various Govt Schemes in rural areas. He specially worked for solving farmer's problem including farmer suicides issue. He is a guest lectures in various Govt institutes, a writer and a columnist in newspapers.)

An intelligent man thinks he knows everything, a wise man knows that there is still to learn.

CVO visits Barrackpore Division

नैतिक कहानी

एक नमक बेचने वाला रोज अपने गधे पर नमक की थैली लेकर बाजार जाता था। रास्ते में उन्हें एक नदी पार करना पड़ता था। एक दिन नदी पार करते वक्त, गधा अचानक नदी में गिर गया और नमक की थैली भी पानी में गिर गई। चूँकि नमक से भरा थैला पानी में घुल गया और इसलिए थैला ले जाने के लिए बहुत हल्का हो गया। इसकी वजह से गधा बहुत ही खुश था। अब फिर गधा रोज वही चाल चलने लगा, इससे नमक बेचने वाले को काफ़ी नुकसान उठाना पड़ता। नमक बेचने वाले को गधे की चाल समझ में आ गई और उसने उसे सबक सीखाने का फैसला किया। अगले दिन उसने गधे पर एक रुई से भरा थैला लाद दिया। अब गधे ने फिर से वही चाल चली। उसे उम्मीद थी कि रुई का थैला अभी भी हल्का हो जाएगा। लेकिन गीला रुई (कपास) ले जाने के लिए बहुत भारी हो गया और गधे को नुकसान उठाना पड़ा। उसने इससे एक सबक सीखा। उस दिन के बाद उसने कोई चाल नहीं चली और नमक बेचने वाला खुश था।

Technical Approach in Battling Corruption

Ms. S. Anitha
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Abuse of authority for personal gain is called "Corruption". Corruption destroys confidence, undermines democracy, stifles economic growth and creates inequality, poverty, social division and makes the socio-economic system worse.

For decades, India's economy has been harmed by widespread corruption, which has held back the country's growth and prevented it from reaching new heights. However, the nation is successfully striving to get rid of this evil thanks to the development of technology and the government's focused efforts. At various levels, from smart phones to Block chain, the technology plays a vital role in the ongoing battle against the evil of corruption.

Technologies such as block chain, data mining, digitisation, big data, cloud computing, artificial intelligence, Industrial Internet of things (IIoT) etc., makes life easier, eliminates loopholes & corruption, brings accountability and convenience. Now, let us understand the technology to realize how these can be utilised to prevent corruption.

(A) Blockchain Technology:

Blockchain is a digital ledger that stores transactional records i.e., sales, purchases, receipts, payments, published documents/ reports etc., (known as "blocks") of owner/companies/ government in several databases (known as "chain,") in a network connected through peer-to-peer nodes. Every transaction in this ledger is authorized by the digital signature (known as "Key") of the owner, which authenticates the transaction and safeguards it from tampering. The digital signature is merged with the peer-to-peer network; a large number of individuals who act as authorities use the digital signature in order to reach a consensus on transactions Data.

How it works:

The first party would attach the transaction information to the public key of the second party. This total information is gathered together into a block. The block contains a digital signature,

a timestamp, and other relevant information. This block is then transmitted across all of the network's nodes, and when the right individual uses his private key and matches it with the block, the transaction gets completed successfully. It should be noted that the block doesn't include the identities of the individuals involved in the transaction. Since information is stored in the blockchain, transactions are transparent and can be viewed by all users.

Features of Blockchain Technology:

Highly secure: It uses a digital signature feature to conduct fraud-free transactions making it impossible to corrupt or change the data of an individual by the other users without a specific digital signature.

Decentralized System: Unlike conventional system which requires approval of regulatory authorities like a government or bank for transactions, there is also no third-party interference and hence scope of corruption is eliminated in addition to saving in third party fee. Also, since transactions are done with the mutual consensus of users, the transaction is smoother, safer and faster.

Speedy and convenient transactions: The transactions take only few minutes, whereas other transaction methods can take several days to complete.

Automation Capability: It is programmable and can generate systematic actions and events such as payments automatically when the criteria of the trigger are met.

Due to the above features, there is no scope for corruption in addition to saving time and cost.

Aerospace applications:

Aerospace giant M/s. Honeywell uses Blockchain technology to share real time technical data such as design specification, MRO data, aircraft records and spare parts data (as Blocks) and provides authorization to all authorized users through several databases (as chains). In aerospace industry, this is a game-changing technology that will simplify and transform record keeping for aircraft owners and airlines around the world. This prevents data theft of proprietary technical information of design specification/MRO information having IPR rights and also prevents corruption involved in sharing of design data/MRO data to other Aerospace companies which otherwise require ToT Fee, Licence Fee & Royalty fee.

Further, Aircraft Maintenance Organizations log service data and submit to blockchain through the company application. Aircraft Operators log flight data and submit to blockchain through the company application. Fixed Base Operators submit airport services data to blockchain through the

company application. This database is transparent to all authorised users to trigger the actions/ events especially in aviation safety sector.

Blockchain Technology can be implemented in HAL also for highly secured transactions viz sales, purchases, receipts, payments, published documents & reports with foreign/ local suppliers/ OEMs as well as between HAL Divisions.

(B) Industry 4.0

Industry 4.0 is the realization of the digital transformation of the field, delivering real-time decision making, enhanced productivity, flexibility and agility and characterized by increasing automation and the employment of smart machines and smart factories, informed data helps to produce goods more efficiently and productively across the value chain.

Latest Technologies engulfing Industry 4.0 such as Big data, Cloud computing, Digitisation, Digitalisation, Artificial Intelligence, Industrial Internet of things (IIoT), have encroached upon all areas of business. We need to have the basic understanding on these technologies to understand and co-relate how these technologies can help preventing corruption.

Big data: Big data refers to high-volume, high-velocity and high-variety information assets that are too large and complex to be effectively stored or processed. Eg. New York Stock Exchange generates about one terabyte of new trade per day, Facebook generates 500+ terabytes and a single Jet engine can generate 10+ terabytes of data in 30 minutes of flight time. These data are stored and processed in a high-powered server called cloud. Processing of big data on the "cloud" and performing operations specified on that data is called "cloud computing" e.g., Dropbox, Gmail, Facebook and Amazon web services.

Digitisation & Digitalisation: Digitization is the technology involved in conversion of data and processes into digital form whereas digitalization is a transformation into digital technology to collect data, establish trends and make better business decisions.

Artificial intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems. AI requires a foundation of specialized hardware and software for writing and training machine learning algorithms. AI systems work by ingesting large amounts of labelled training data, analysing the data for correlations and patterns, and using these patterns to make predictions about future states. AI programming focuses on three cognitive skills: learning, reasoning and self-correction. AI applications uses machine learning technology that can process the data and quickly turn it into actionable information.

Internet of things: The Internet of Things (IoT) describes the network of physical objects / things that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet. By using cloud computing, the cloud, big data analytics and mobile technologies, physical things can share and collect data with minimal human intervention. Digital systems can record, monitor, and adjust each interaction between connected things which enables meeting physical world and digital world.

How these technologies can prevent corruption: -

a) RFID tags can be provided for each items entering the company at the gate itself and the unique tag shall be generated and digitally recorded in the database. No consignments shall enter the gate and later to stores without this RFID tag. This would prevent forging, theft and malpractices and corruption on the items received at HAL. Also, RFID system can be integrated with security check equipment so that theft of small and valuable items that can be easily carried through pocket and bag can be easily checked at the security gate and malpractices shall be prevented. Further, through the concept of "Digitisation" and "Internet of Things" all the computers can be digitally connected and the inventory information / data such spares, consumables, LRUs, Raw materials, Testers & tools ("Big data") entered through the gate are recorded/stored through "Cloud" and can be shared, viewed, accessed and monitored through "Internet of Things" Technology by all the divisions of HAL. This would also help HAL divisions to mutually support the requirements of other divisions since the required inventory information is digitally available to all divisions.

b) The series of technology viz. Digitisation, Big data, Cloud computing and Internet of Things shall also be used in Purchase and Finance areas where corruption is more prevalent. All Purchase and financial data shall be converted in digital form so that corruption related to selection of vendors, tendering process, evaluation of tender, release of purchase order, bills, payment, receipts, accounting etc. can be easily prevented leaving no room for corruption. Also, finance data such as payments, sales, bills receivable, bills payable, commitment and expenditure details shall be made easily available to all complex office Finance heads as well as to corporate office through Big data, Cloud computing and Internet of Things technology. This would also prevent submission of wrong financial reports by the divisions and Corporate Finance need not depend on divisions for any data. Further, using "Big data Analytics" Technology, corporate finance department would get ready made dynamic Financial Reports of the Company based on the finance data from various division and would facilitate top management or Board to take financial / business decisions.

c) Artificial Intelligence can be used in material procurement areas wherein exact amount of spares, consumables, LRUs, raw materials, testers & tools can be procured thereby preventing corrupt activities such as procurement of more quantities from the preferred vendors, recommending source for procurement from preferred vendors, recommending higher price etc., Firstly, all data such as BOM (Bill of Materials), product structure, vendor details (local/foreign), price, proprietary details, specification, previous procurement details, consumption details, shelf life of the items, supply lead time, dynamic failure rates, inventory position, firm and forecast task etc., are to be captured in digital form and stored ("Big data"). Specialized hardware or computers shall be integrated with software for writing and training machine learning algorithms. Algorithms uses large amounts of above digital data, analyses the data for correlations and patterns, and uses these patterns to make predictions and recommend dynamically the procurement action to Purchase department based on the firm and forecast task of each project w.r.t. when the material is required to be procured, how many to be procured, on whom to be tendered, when to be received, what price to be procured etc., leaving no room for fraudulent actions by material planner. This AI technology can also be used in various other areas such as Defect investigation, Qualitative Assurance, inventory management etc.

The above technologies can be widely used in areas such as Manufacturing, Design & Development and MRO of Aircraft and its accessories and also in other aerospace projects of HAL.

Presently, these technologies are in nascent stage at HAL. Implementation of these technologies at HAL in faster pace would help to achieve greater success in our endeavour to become "First

(The author of this article holds BE-Electrical & Electronics Degree from Alagappa Chettiar College of Engineering and MBA from Madurai Kamaraj University. She joined HAL in the year 2001 and working as CM(Production)- Overhaul Division)

नैतिक कहानी

बहुत पुराने समय की बात है, एक राजा ने जानबूझकर एक बड़ा सा चट्टान रास्ते के बीचों-बीच में रखवा दिया। वहीं वो पास के एक बड़े से झाड़ी में छुप गया। वो ये देखना चाहता था की आखिर कौन वो चट्टान रास्ते से हटाता है। उस रास्ते से बहुत से लोग आने जाने लगे लेकिन किसी ने भी उस चट्टान को हटाना ठीक नहीं समझा। यहाँ तक की राजा के दरबार के ही बहुत से मंत्री और धनी व्यापारी भी उस रास्ते से गुजरे, लेकिन किसी ने भी उसे हटाना ठीक नहीं समझा। उल्टा उन्होंने राजा को ही इस बाधा के लिए ज़िम्मेदार ठहराया।

बहुत से लोगों ने राजा पर सड़कों को साफ न रखने के लिए जोर-जोर से आरोप लगाया, लेकिन उनमें से किसी ने भी पत्थर को रास्ते से हटाने के लिए कुछ नहीं किया। तभी एक किसान सब्जियों का भार ले कर आया। शिलाखंड(चट्टान) के पास पहुंचने पर किसान ने अपना बोझ नीचे रखा और पत्थर को सड़क से बाहर धकेलने का प्रयास किया। काफी मशक्कत के बाद आखिरकार उसे सफलता मिली। जब किसान अपनी सब्जियां लेने वापस गया, तो उसने देखा कि सड़क पर एक पर्स पड़ा था, जहां पत्थर पड़ा था। पर्स में कई सोने के सिक्के और राजा का एक नोट था जिसमें बताया गया था कि सोना उस व्यक्ति के लिए था जिसने सड़क से चट्टान को हटाया था।

Awareness on PIDPI

Awareness on PIDPI

जो गिरने से डरते हैं, वो कभी उड़ान नहीं भर सकते।

Tackling Corruption: A Multi-Pronged Approach

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The word "leverage" is defined as the exertion of force by means of a lever. When we speak of "leveraging technology", we are referring to the use of technology to make significant changes in a business. When an organization harnesses the power of technology, the investments pay off in an exponential return. Intentionally leveraging technology can be the difference between a struggling business and a stable one; between a flat business and a growing one; between a standard organization and an exceptional one. Information Technology is in the era of digitalization, where new technologies can provide numerous & attractive ways for growth, innovation, prevention of corruption and differentiation. By 2025, every industry will be transformed by digital business, therefore it is the need of hour to utilize modern technology to become agile and more efficient. Technology is not just essential for day-to-day running of business but also can help to achieve growth and success when utilized effectively. With the use of right tools, we can easily adapt to changing business needs, provide a good customer service, minimize operational costs, maximum revenues and prevent corruption.

Legendary American film director, Godfrey Reggio once said, "It's not that we use technology, we live technology." Technology has become an integral part of our lives by bringing with it a vast number of benefits, making us more creative, productive, and innovative. Apart from this, productivity and innovation along with the technologically boosted creativity of humans have proven to be extremely helpful for our nation in tackling an issue that plagued our nation ever since it got independent, and i.e., corruption. Rampant corruption in India has damaged the Economy and further stunted its development for decades, thereby preventing our nation from reaching new heights. It isn't something new to our country but has existed for

Leveraging technology to fight corruption

- Corruption is illegal and creates inequality
  - it distorts competition and free markets
  - it incentivises and rewards unethical behaviour
  - It hinders social and economic growth.
  - delays the emergence of developing economies
  - stunts thriving democracies based on good governance and the rule of law.

a very long time. Even the great Indian teacher and Minister Kautilya once remarked in his political treatise Arthashastra - "It is as difficult to prevent a government servant from corruption as a fish from drinking water". Hence, we can interpret from this how corruption must've menaced ancient India as it is doing now.

A study conducted by Transparency International in 2005 recorded that more than 62% of Indians had at some point or another paid a bribe to a public official to get a job done. In 2008, another report showed that about 50% of Indians had first-hand experience of paying bribes or using contacts to get services performed by public offices.

However, due to the advent of technology and the government's concentrated efforts and enormous investments, the nation is successfully fighting and getting rid of this evil. The progress made by our nation is reflected in its rankings in the 2020 Corruption Perception Index which ranked the country 86th place out of 179, reflecting a steady decline in the perception of corruption among people. Technology has played a significant role in the decline of such a perception of corruption among the people. The role of technology is a very significant one in the constant fight against the evil of corruption at various levels.

Most of the ordinary citizens in our country today possess a Smartphone, which has become a really common device. The presence of this device, although so common, is a major deterrent to corruption. The fact that it can be used to record wrongdoings and corrupt officials, has deterred many from indulging in such activities. Even Social Media which is one of the most effective advents of technology has contributed to fighting corruption, with citizens turning into reporters due to which those who're caught indulging in corruption face condemnation by all as well as legal action by authorities taking cognizance of the issue. Further, technology has shortened the gap between the government and the people by removing the much-hated intermediaries or "Middle-Men".

Digital India, the flagship scheme of our Hon'ble PM Shri Narendra Modi which has greatly helped in ensuring benefits and provisions reach the people instead of getting stuck in the cobwebs of the bureaucracy and middlemen, is a prime example. Corruption at lower levels has also been thwarted by the incorporation of technology. Earlier when the proper enforcement of rules was affected by the

temptations of the enforcers who accepted bribes to let go of those who violated the rules, the advent of technology today in extracting fines (E-Challans) has ensured that rules are properly enforced and followed. Further, the promotion of cashless transactions has also ensured that all transactions between people are recorded and there is nothing dealt with under the table or no commission mongers trying to prey on innocent citizens. Another very positive implication of technology is the government's DBT (Direct Benefit Transfer) system, which coerces the middlemen (if any remain) to function as they are expected to without any malicious demands of "Kharcha Paani", as earlier it was these middlemen who wielded the power to disburse benefits like LPG subsidy, MNREGA payments, etc to the people, however, now this power rests with technology which doesn't have any vested interests or biases. Moving on, it is also essential to acknowledge that technology hasn't only curbed corruption in the chain of contact between the government and fellow citizens, but it has also relieved the government from the corrupt parasites who for decades ate away the nation's wealth. E-governance systems as well as online government digital marketplaces like the "Government-E Marketplace (GEM) have plugged the leakages in the bureaucracy and increased accountability thereby nullifying corruption. Further, the NITI Aayog released a discussion paper earlier this year, in which it identified use-cases where the technology can potentially improve governance ranging from tracing of drugs in the pharmaceutical supply chain to verification of educational certificates, all of which are issues intricately linked to corruption.

It is also essential to acknowledge that technology hasn't been that effective in some cases and has also had a negative impact on the entire situation. For instance, it is easy to use modern technological crypto currencies such as Bit-coin to hide corruption by transferring money anonymously, untraceable, and remotely without any accountability of the transactions across national and international boundaries. Transactions involving crypto currencies are very common over the Dark Net which fuels illegal activities. Similarly, popular online gambling websites and applications, massively multiplayer online games, etc. also can be used for money-laundering as an alternative to the mainstream modes to do so.

We must understand that corruption is a social and economic problem that demands a multi-pronged approach that also deals with the societal motivation and justification of corruption rather

than just the opportunity which technology has already dealt with. The major benefits of adopting the Leveraging Technology can be summarized as follow:

- Improved Agility
- Higher Returns
- Automate workflow
- Improve collaboration
- Enhance cyber security
- E- Procurement

- Informed Decision-Making
- Increased Productivity
- Track of projects and maximize productivity
- Performance analysis and analytics
- Forensic Tools
- E- Payment

Apart from the above, there are many other areas where technology can be leveraged simultaneously for efficiency, economy and corruption control. The key idea being that risk management tools are made integral part of the main business processes. For example, there are frequent cases of frauds in availing various employee benefits like medical expenses, LTC, TA/DA etc. The accounting software's can be built in such a manner that the computer system generates 'exception report' and gives alerts wherever there are significant deviations from certain benchmarks and norms. Similarly, the same accounting software system can make inter unit/ inter location comparisons of expenditure on these items. Similarly, software can be developed with regard to procurement with inbuilt features for making inter unit/inter office comparisons of rates and consumption patterns. Extensive use of website can be made both as a tool for communication with the stake holders as well as for curbing corruption. Right to information and transparency are the biggest tools for fighting corruption and website as a tool for such communication can have very extensive application across the entire spectrum of Govt. activity.

To conclude, India is on an upward trajectory in terms of digitalization, albeit, there are more grounds to cover in rural India. Digital illiteracy also creates corruption as this gives opportunity to various individuals to ask money for filling various online forms or other application etc. Digital literacy programmes like the Pradhan Mantri Grameen Digital Saksharta Abhiyan (PMGDISHA) can also be ramped up in order to create greater transparency and accountability within delivery systems. Meanwhile, digitization of internal processes of the government and data-driven tech innovations are areas that should be explored to further strengthen the integrity systems and disrupt corruption risks.

(The author of this article is a Chartered Accountant. He joined HAL in the year 2007, worked in various divisions of HAL in various capacities and presently working as SM(Vig)- Lucknow division.)

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Team Vigilance along with Shri R. Madhavan, CMD-HAL during 24th Vigilance Officers' Conference on 06th to 08th April 2022 at Accessories Division, Lucknow.

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