

# ***Are you still there? Need for code of information ethics in crisis communication in the case of Flight 370 (MH 370/MAS 370).***

T.R.Ramakrishnan, Faculty, Jain Group of Institutions (Jain University/Jain College), Bangalore.

**Abstract:** Communication aided by ICT has become a very important aspect in the world. This paper presents the results of the online content analysis with regards to the ethical concerns of the message senders in the case of the missing Malaysian Airline Flight MH 370 to the information society. The millennium Development Goals established by United Nations in 2000 indicates that the benefits of new technologies must be made available. This paper based on action research, highlights some of the most difficult outstanding questions that surround the information dissemination that has created a historical communication crisis using technology to the society. It debates around three major areas: a) dissemination of critical information to the society, and b) the ethical issues related to these news. There are so many variables that are dependent on technology for gathering information in scenarios for a plane crash one being "controlled flight into terrain"(CFIT). The assumptions of the missing Flight MH 370 based on data capture from various technology dependent sources have failed to provide timely information thereby creating a global unrest to the airline industry and Government. The ethical issues in communicating to the public has been a global concern that has led to the choice of developing information ethics and new technology which is discussed in this paper.

**Keywords:** Crisis, ethics, flight MH 370, information, technology.

## **I. INTRODUCTION**

The airline industry's main concern is about its fatal air crashes and its effects. The rising questions and anxiety from the family and relatives of the lost passengers, investigation and its theories, media's varied reporting, the online threads in various news media blogs, the pressure from the Government of the victims, the public litigations and the space control over the crashed location have all been criteria's, which requires strategies to handle situations of such crisis. Failing to provide timely correct

information would result in loss of revenue to tourism, fall of trust in the ruling Government and critically the loss of trust on technology based information for investigation. This urges for development of alternative sources of information using technology in order to reinstate the merit of the airline industry.

This paper looks at the incident of the missing of Flight MH 370 and analyses the communication process of gathering and disseminating information about the catastrophic accident to the public. This study would benefit the Information Communication Technology and the airline industry as well as the Government in order to innovate in communication technology.

## **II. REVIEW**

### **A. Computer ethics and theory**

Wiener raised ethical concerns, and offered suggested solutions, about the likely impacts of computers and other cybernetic machines. Cybernetics he said could be used to create mechanical slaves that would force human workers to compete for jobs against 'slave labour'[1]. Wiener's information ethics are related to today's Internet or cyber ethics and nanotechnology ethics. Walter Maner coined the term 'computer ethics' when he noticed while teaching medical ethics, that computers would create new ethical problems that had never been seen before and his project on, 'Starter kits in Computer ethics' became popular among computer science students and faculties[2].

Computer systems and software are capable of harboring embedded values on two derivative approaches, disclosive computer ethics and value-sensitive design in which they represent an interesting shift in focus from human agency to technological artifacts and systems [3].

This study looks at how technological artifacts and systems have been trusted for information gathering and distributing information over human agency.

Ethics in the olden days were related to the study of what is good for both the individual and society. In Moor's computer ethics theory, respect for 'core values' is a central aspect of his 'just consequentialism' theory of justice, as well as his influential analysis of human privacy. Human values can be embedded within technology, so potential computer-ethics problems can be avoided.

Floridi's theory state that every existing entity in the Universe or info sphere, when viewed from a certain 'level of abstraction', can be construed as

an 'informational object' with a characteristic data structure that constitutes its very nature. But, this could be damaged by altering the specifications of data structure which Floridi calls 'entropy', which creates power that could lead to destructive attitudes, and this should not be caused and must be prevented, removed from the info sphere. The info sphere should flourish with informational entities and preserving their properties [4].

Information ethics argues that the agent related behavior and the patient-related status of informational objects can be morally significant. The moral agent is an interactive, autonomous and adaptable transition system that can perform morally qualifiable actions [5]. Artificial agents which includes digital and social agents count as moral agents that are morally accountable for their actions. Information ethics relates to the action or process that may be good or bad based on how it affects the infosphere.

### *B. Crisis Communication*

In society, we face different crisis namely the natural disasters, organizational crisis and terrorism which disrupts the life of people in society. An organizational crisis is a specific, unexpected, and non-routine event or series of events that create high levels of uncertainty and simultaneously present an organization with both opportunities for and threats to its high-priority goals[6].

### *C. Mysterious aircraft disappearance*

There are hundreds of Air crashes, but only few have been highlighted as missing without any evidence to find the aircraft. Some of them have been highlighted in this section.

The Uruguayan Air Force Flight 571 headed to Santiago, Chile in 1972, crashed into the Andes Mountains killing 12 out of the 44 passengers and crew on flight. It took 72 days for authorities to conclude about the incident. Those alive lived by cannibalism by eating the remains of the dead passengers. The information was never disseminated timely like recent days due to lack of technology.

The Bermuda triangle an ocean area between Florida, Puerto Rico, and Bermuda had two British South American Airways passenger jets disappear in 1948 and 1949. The passengers in this flight were never found. There was lack of timely communication. In 1945 five American bombers were lost and a 13 man crew who went to find the missing plane also vanished in the Bermuda triangle.

It took almost 50 years when the British South American Airways vanished in the Andes Mountain which was discovered in 1998 by the

Andes rock climbers. There was lack of proper communication during the same period.

The Flying Tiger line Flight 739 with 90 passengers and crew headed to Philippines took off from Gaum in 1962, was never found till date.

Amelia Earhart the first women pilot, in July 2<sup>nd</sup> 1937 disappeared over the Pacific Ocean. After multi-million dollar search effort, there were no traces but in 1939, she was declared dead.

British South American Airways, the Star Ariel left Bermuda to Jamaica on January 17<sup>th</sup>, 1949 with 20 passengers and crew but due to communication problems throughout the flight, it vanished. The authorities concluded that the cause was unknown and has been sabotaged by a "known war-registered saboteur," and further search operations were shut down [7].

The Air France Flight 447, the Airbus A330 flight from Rio de Janeiro to Paris dived into the Atlantic Ocean in 2009 killing all 228 passengers and crew on board by a sea floor event. In this case also due to lack of timely and accurate information, Air France dealt with ambiguity by saying speculations are not to be made by the media before investigating agencies report [8].

### *D. The role of information ethics*

During the crisis aircraft disappearance it is very important that the victims of the passengers and crew members of the flight are timely informed about the investigation of the lost flight. When some effects of the identifiability of victims[9,10,11,12] and the effects of outcome information, it is noticed that the outcome of the decision on information dissemination from the decision maker to the media and the public drifts to different theories of susceptible deliberative actions linking to the mystery.

The mass media plays a vital role in many phases of crisis and disasters and it is very critical. The actual picture of the disaster is made known to the public only by the mass media thus keeping the society binding on the information about the disaster. Media is also responsible for misconceptions that could lead to errors in judgment during such crisis. It is very critical that the journalists follow media ethics during such times and maintain objectivity in their reporting of news.

## III. PROBLEM

The Malaysian Airline Flight MAS 370, from Kuala Lumpur to Beijing, took off from the Kula Lumpur Airport at the scheduled departure time 12:40 a.m. carrying 227 passengers, 12 crew with luggage aboard on March 8<sup>th</sup> 2014. The Boeing 777-200ER was due to land at Beijing Capital

International Airport at 6.30 a.m. The Pilot and Air Traffic Control (ATC) Communication began at 12:15 am by co-pilot, Fariq Abdul Hamid. On the 227 passengers included 5 Indians, 154 Chinese, and 38 Malaysians. With the last communication from the cockpit to the ATC was at 01:19:29 am. Further, the cockpit or flight communication was cut off from the flight to ground or satellite.

The Flight 370 was declared to be lost. The outcome was shocking to the relatives of those on board Flight 370 have endured uncertainty and grief due to lack of timely information and decision on the dissemination of official information to the media and public. Some of the questions that surround this study are: What sought of technologies have been used to gather and disseminate this crisis information? What was the process of disseminating official information? What are the ethical issues in disseminating the crisis information? and What are the trends using technology to disseminate information during crisis?

#### IV. OBJECTIVES

A study was apt at this stage to identify the process of the official communication pattern about the disaster to the media and public.

The objectives include finding the details about the communication system available in the aircraft and the process of communicating to the ATC, aircraft company and the airlines; the hardware used to find the black box; and to identify the ethics on information dissemination to the mass media and public.

#### V. Methodology

This study is based on action research by secondary data that looked into the online postings of news about the missing Flight 370. It reviewed about 8 airplane mysterious disappearance and analyzed the information dissemination. Moreover, the emphasis is based on the current news posting about the missing flight in popular news media websites. It looks at the professional ethics that has had an effect in the present crash of Flight 370 (MAS/MH 470).

#### IV. FINDINGS

##### A. Unexpected missing of Flight 370

At an unexpected event by surprise ceased the communications from the ATC and the MAS 370 at 01:19:29 am. The script of ATC's communication shows that at 12:50:06 am ATC Lumpur Radar area ordered "Malaysian Three Seven Zero climb flight level three five zero." At 12:50:09am MAS 370 responded "Flight level

three five zero Malaysian Three Seven Zero". At 01:01:14 am repeated, "Malaysian Three Seven Zero maintaining level three five zero". Immediately the ATC responded at 01:01:19am, "Malaysian three seven zero.". After a wait of 5 minutes at 01:07:55am the pilot responded "Malaysian...Three Seven Zero maintaining level three five Zero." At 1:08:00 ATC called, "Malaysian three seven zero." There was no response from the pilot. At 01:19:24 am the ATC ordered, "Malaysian Three Seven Zero contact Ho Chi Minh 120 decimal 9 Good Night". At 01:19:29 am MAS 370 replied "Good Night Malaysian three seven zero." That was the last communication from the pilot to the ATC[13].

It is surprising that after about a minute and a half the transponder was disabled and by another 9 minutes the flight was read on civilian or secondary radar. By another 45 minutes, it was seen last on military or primary radar that locates the possibility of the plane flown over Paulau Perak in the Strait of Malacca. Finally, at 8:11 am the last satellite communication takes place. Hence, the communication system in the Boeing 777-200ER was sought after [14].

##### B. Communication systems in Boeing 777-200ER

The Boeing 777-200ER has the following communication systems installed: a) Cockpit voice recorder system b) Radio communication system, c) SELCAL system, d) SATCOM system, e) Communication crew altering system, f) Interphone communication system, g) data communication system[15].

The above communication network is controlled using the: a) audio control panels, b) radio tuning panels, c) Control Display units(CDU), d) Multifunction Display(MFD). The following list the use of the communication tools. The audio control panels are used to manage the radio and interphone communication systems.

Microphones are keyed by asserting the desired audio control panel transmitter select switch and using the MIC (microphone) position of a control wheel or audio control panel microphone/interphone switch, a glareshield MIC switch, or a hand speaker. An oxygen mask microphone is enabled and the boom microphone is disabled when the oxygen mask stowage doors are open.

The cockpit voice recorder records all inputs continuously inside the cockpit including any transmitted or received flight deck audio and conversations using an area microphone. The radio tuning panels are used to tune the very high frequency (VHF) and high frequency (HF) radios. The panels are designated left, center, and right,



and are normally associated with the respective VHF and HF radios. The SELCAL system monitors the three VHF radios and the two HF radios. When the system receives a call from a ground station, the crew is alerted through the communication crew alerting system.

The SATCOM system provides both data and voice communications. The system is managed by the satellite data unit. Flight deck voice calls are controlled using the CDUs and audio control panels. The communication crew alerting system provides aural and visual alerts for normal operations requiring crew awareness that may require crew action. Visual alerts are presented as Engine indicating and crew alerting system (EICAS) messages.

The interphone communication system includes: The flight interphone, service interphone, and passenger address systems which are normally operated through the audio select panel. The cabin interphone is operated through the CDU or the flight deck handset.

The MFD communications functions are used to control data link features. Data link messages not processed by the FMC are received, accepted, rejected, reviewed, composed, sent, and printed using communications functions on the MFD. Data link communications can be established with participating ATC and company locations. ACARS and data link radio management functions are provided through communications management menus.

ATC provides downlink messages to ATC, where available. FLIGHT INFORMATION provides for future downlink messages to the National Weather Service or a similar provider. COMPANY provides for downlink messages to airline facilities. REVIEW displays a list of all transmitted messages, received messages not requiring a response, or received messages with the response already sent. REVIEW is inhibited if there are no listed messages. MANAGER provides the controls for data link and communications systems in general. NEW MESSAGES displays a list of uplinked messages that have not been displayed or responded to. NEW MESSAGES is inhibited when there are no new messages.

Crew Feedback ATC uplinks containing clearance data that the crew can set on the MCP or EFIS control panel have a crew feedback display function. Data which provides feedback is: MCP speed, MCP heading, MCP altitude, barometer settings, transponder code, VHF frequency, HF frequency.

ATC uplinks arriving message, an aural chime, and the display of the EICAS ATC message block. Accept/Reject Uplinks ATC messages requiring an

accept or reject response display those options on the EICAS display.

Airplane situation reports, route changes, speed and vertical clearances, and voice contact requests can be sent or received as appropriate. Once logged on, transfer to adjacent ATC facilities is normally automatic. In changes request related to these parameters the reason for the change is required to be entered. However, the requests from the altitude, speed, and route pages can be combined into one downlink request and send the message to ATC.

NEXT CENTER Displays the ATC facility identifier to which an automatic handoff transfers the connection. This apparently has not been traced from the ground thought it was informed that the crew has to touch base with Ho Chi Minh 120 decimal 9. This establishment to ATC connection failed.

If the EICAS advisory message DATALINK LOST is displayed for 16 minutes, the ATC connection is automatically lost and the EICAS advisory message ATC DATALINK LOST is displayed. Once an ATC connection is terminated or lost, the logon entries revert to the default values.

Here the default values are for the flight to take route to Beijing but flight 370 has taken the opposite route towards southern Indian Ocean. The emergency report can be communicated to the ATC which will place automatic dependent surveillance (ADS) into emergency mode. Here, there was no message received by the ATCs.

The Flight Management Computer (FMC) tracks the latitude and longitude data. Beyond that the route waypoint, speed, POS fuel remaining among other details.

Aircraft Communications, Addressing and Reporting System (ACARS) are digital data link system for the transmission of messages between aircraft and ground stations. The ACARS manager page provides selection of ACARS frequencies, scan rates and mode. The ACARS mode auto is the normal ACARS mode to automatically select either VHF or SATCOM for message transmission. When automatic dependent surveillance (ADS) is armed, automatic position report messages are sent to ATC and company. But if the AUTO MESSAGES OFF selection is opted in the automatic message manager then the CONFIRM OFF key is displayed. Selecting the CONFIRM OFF key, turns off the capability to automatically send flight operations related messages. This in turn alerts messages to be displayed and captured on computer. Table 1 show the different alert messages on various conditions on flight which are recorded in the black box.

Table 1: EICAS alert messages based on communication connection.

Message	Condition
ATC datalink lost	An established data link has been lost.
DATALINK LOST	Datalink is temporarily lost
DATALINKS SYS	Datalink system has failed.
HF DATALINK	HF datalink has failed
VBHF DATALINK	VHF datalink has failed
RADIO TRANSMIT	A VHF or HF radio is keyed for 30 secs or more
SATCOM	SATCOM system has failed
SATCOM DATALINK	SATCOM datalink has failed
SATCOM VOICE	SATCOM voice communication has failed
SATVOICE LOST	SATCOM voice communication is temporarily lost

### C. Information ethics

The Malaysian Government has failed to follow the code of information ethics with respect to gain public confidence and public safety by absence of timely facts during the time of crisis. The Malaysian airlines, Boeing and Rolls Royce has failed to comply to computer ethics as the evidence of the failure of communication at disastrous times by technology enabled communication systems on the aircraft. The crew members have not failed in their standards of service.

### D. Failure in communication at ground

The Flight MAS 370 is equipped with a satcomantenna, the satellite would send a little signal going, "Are you still there?" and the plane would send a signal back saying, "Yes, I'm here." But this communication has not been traced either by National Air Traffic Services(NATS) nor the satellite company, Inmarsat, which could track where the plane was, where it was moving and what it was doing[16].

### E. Failure in timely communication by the Malaysian Government to the media and the public

It's a known fact that the media try to obtain more information, use their own data and investigations to add background to their stories, dispatch reporters and report anything they are told and provide maximum space and air time to that one single story on disaster[17].

In the case of MH 370, the process of official communication to the public was from news briefings by the Government of Malaysia.

Even after many weeks after the Flight 370 vanished from the sky, the public is yet to know the evidence of it being found.

The information ethics have been questioned due to many of the events that have taken place since March 8<sup>th</sup> 2014. There were several blunders made for the delayed decision and communication[18].

It was a blunder for the immigration officials to allow 2 passengers to board with stolen passports and announcing there were 4 and reconfirming back to 2 passengers.

The ground communication system did not record that the plane made a sharp left turn, thought it flew over military radars.

The ATCs in path of the scheduled flight 370 did not respond for 5 hours after takeoff and finally confirmed it has been lost. The officials couldn't even correctly relate to the last words spoken by the co-pilot before the communications were shut down. It was not right for them to announce officially the cockpit recording without proper evidence initially and correcting thereafter.

It was incorrect for the Malaysia's chief of police to inform incorrectly about the baggage was taken off because five people did not board the flight and later withdraws that story.

On March 11<sup>th</sup> 2014, the China Government was not confident of the Malaysia search group's information and demanded to step up their efforts and speed up their investigations. Upon confirmation from the Military radar which captured the MH 370 turning from its path at Malacca Strait.

Though the officials knew that the flight appeared in the military radar about its changed west bound route, they diverted the media and the resources to search east of Malaysia. It was a tragedy of errors when Vietnam suspended its search for the flight 370 upon Malaysia's denial to critical information requests.

The Malaysian police blame photocopying error of the two men with stolen passports. Later the Malaysian Transport Minister Seri Hisammuddin Hussein denies that the plane flew for 4 hours and later accepts that it did.

Finally on March 15<sup>th</sup>, post the official military based data, investigators stop search operation around Malaysia. And due to certain queries, the homes of the MH 370 pilot and co-pilot were searched. At the same time India suspends its search based on delayed and incorrect information to investigators.

Further after many failures in communication, the American officials state that FBI agents were ready to investigate.

It was absolutely unethical for the police to manhandle the families members of passengers when they had staged a protest for timely information.

After 16 days, the Malaysian airlines sends SMS text to the families of passengers that says, "We deeply regret that we have to assume beyond any reasonable doubt that MH370 has been lost and that none of those on board have survived." Four days later, they raise the hopes of the families as the officials have not discounted the possibility of survivors. It is also not right to announce to the public that there is sealed evidence which cannot be parted.

And by March 31<sup>st</sup>, the Malaysian Department of Civil Aviation corrects early reports that the last communication from MH370 was "Alright, good night." The actual words were "Good night, Malaysian three-seven-zero."

#### *F. Technologies used to capture data*

Vietnam reported that a signal was detected from the plane 225 kms southwest of Vietnam's southernmost Ca Mau province and it climbed 45,000 feet after it disappeared from the civilian radar, turning sharply west. At the same time the second plane 'Q' shows its altitude of 49,000 feet and making a sharp turn.

Even the data from Rolls-Royce engines, reportedly showing the plane descending to 40,000 feet in a span of one minute was not accepted by investigators as they felt it would take longer time to descend to such distance.

At this stage there was huge confusion as to which plane was MH 370. Finally after the prime minister confirmed that the Malaysian airforce defense radar picked up traces of the plane turning westwards, into the northern stretches of the Strait of Malacca.

The military radar track finally concluded that the plane flew northwest over the Strait of Malacca toward the Indian Ocean. This was linked by the media to the evidence from residents of Maldives island of KudaHuvadhoo in Dhaal Atoll having seen low flying jumbo jet resembling the Malaysian airlines colour. Close to that is the mysterious Diego Garcia island, a military base with a sizeable landing strip holding terrorists. The military officials did not accept the islanders statements.

The Inmarsat's final handshake from the satellite concluded that the image is at the southern most end of the arc towards the Indian Ocean. Thus, the Radar and the Satellite data converged to a similar reading which made the search operations team of MH 370 to concentrate at a location close to Australia.

To work out which direction was taken by flight MH370, Inmarsat, working with the UK's Air Accidents Investigation Branch (AAIB), says it

used some clever analysis of the Doppler effect[19].

From an area covering 2.97 million square miles the Australian government's Joint Agency Co-ordination Centre (JACC) said the search for the downed jet would on Wednesday 8<sup>th</sup> April, focus on an area of about 75,423 sq km, about 2,261km northwest of Perth. The technologies used were:

*1.The hardware:* Satellites, aircrafts, surface ships equipment's, cameras and sensors were used to find the black box of the flight MH 370[20].

*2.Satellites:* China's satellite Gaofen-1, responsible for the images on suspect objects floating in the southern Indian Ocean. NASA's Earth-Observing-1(EO-1) satellite and the remote controlled ISERV camera are deployed on the International Space Station to acquire images of possible air crash sites.

*3.Aircrafts:* Reconnaissance aircraft from Australia, New Zealand, the United States and China are currently involved in the search for, and identification of, this ocean-based debris. P-3 Orion which are long range, long-loiter capability aircrafts that can be on air for 16 hours are reemployed. It also includes P-3C (U.S. Navy) AP-3C Orion (Royal Australian Air force), P-3K2 Orion (New Zealand Air Force) and P-3J Orion (Japanese Maritime Self-Defense Force).

The sophisticated sensors on board these aircraft can detect sound 1,000 feet (304 meters) below the water's surface, while it can fly just 200 feet (60 meters) above the water.

The P-8A Poseidon from Boeing is the world's most sophisticated anti-submarine and anti-surface warfare aircraft is also deployed for the search. It can fly at 5,000 feet (1,524 meters), dipping to 1,000 feet to get a closer visual look at objects for about 9 hours continually. Its radar capabilities can investigate small contacts on the water surface. The onboard camera system and sensors can investigate the contacts by the crew.

The Ilyushin Il-76 has an Aerial-Delivery System (ADS) for dropping cargo and other equipment while in flight - something that may be useful if a crash site is found which is also deployed in the search.

*4.Surface ships and equipment:* A Chinese icebreaker, The helicopter-carrying Xuelong or Snow Dragon and Britain's Royal Navy coastal survey ship, HMS Echo has joined the search. Echo can support to submarine and amphibious operations, through the collection of oceanographic and bathymetric analysis of the ocean, its salinity and sound profile data.



The U.S Navy's 7<sup>th</sup> Fleet has the "TPL-25 Towed Pinger Locator System" which is able to locate black boxes on downed Navy and commercial aircraft down to a maximum depth of 20,000 feet (6,096 meters) anywhere in the world. The tow "fish" carries a passive listening device for detecting pingers that automatically transmit an acoustic pulse[21].

#### G. The search continues

The search for Malaysia Airlines Flight MH370 in the Indian Ocean resumed with up to 15 planes and 14 ships, the Australian government's Joint Agency Co-ordination Centre (JACC) said. It said it was receiving data from analysts from Malaysia, United States, UK, China and Australia. Possible ping signals have been detected in the southern Indian Ocean, potentially emanating from the plane's black box flight data and cockpit voice recorders[22].

The search zone for possible floating debris is reduced to 2,390 kms[23]. The area for search of the black box is reduced to 600kms where several sonobuoys capable of transmitting data via radio signals dropped into the Ocean in proximity of the receiving signals. A US navy deep-sea autonomous underwater vehicle (AUV), Bluefin-21, worth US\$4 million has been searching as deep as 4.5km (14,763 feet) to 4.695km (15,403 feet) [24]. But there aren't any results as yet. Since communications technology — be it light, radio, X-rays, wi-fi — is a form of electromagnetic radiation, it does not work properly underwater except sound. The images have led to expensive false leads which when investigated, they have found almost 5.25 trillion of particles of plastic trash weighing about half a million ton [25]. And the search with Bluefin-21 continues as on 19<sup>th</sup> April 2014.

## V. CONCLUSION

The study clearly finds that the official communications to the media and the public was not ethical. Though there were the best of technologies used for communication from the Flight 370 to the ground. It is foreseen that the software has given way for malfunction in the cockpit. Due to the limitation of the time to submit this paper and the global investigation for MH 370 going on, the research details are pending for further intervention and inference about the black box recordings which will reveal all the facts that had happened. Thus the search for the black box has reached its time limit of 30 days battery backup and the vigorous search by multiple nations have yet to show evidence.

The possible reasons for the loss of communication could be the plane's ACARS was manually disabled for unknown reasons. And even if the location of the crash is identified, it is certain that the flight data recorder (FDR) or cockpit voice recorder (CVR) may never be found.

It is evident from this action research from secondary online data sourced from reputed news media, that Information ethics was ignored multiple times by the Malaysian Government and investigating officials in the event of the missing Malaysian Airlines Flight MH 370. This has resulted in the delay of conducting the search in the right directions. The officials have failed to communicate to the relatives of the passengers and crew with correct information which has resulted in their protest against the Government for wrong and delayed information about the missing flight 370 and the passengers on board. The confusion has gathered a high viewership and readership in the various news media in print, broadcast and online. It has been the most crowd sourced research the world has ever witnessed for various theories to have emerged. The failure of timely information dissemination has gained attention of various nations to participate in the search of the omnipresent Flight 370.

To conclude, the study finds it is the worst error in technology that has raised opportunities for controlling cyber warfare and mirroring flight information at ground in future by all airlines around the world. It has led to the National Air Traffic Services to include in its Air Traffic Management System a parallel surveillance of happenings at cockpits of all aircrafts from ground and to take strategies in such situation of crisis that effect innocent public at the cost of nuances of unknown suspects including terrorists, military, Government and the crew or for a more acceptable technical failure of this century till date.

## REFERENCES

- [1] N. Wiener, *Cybernetics: or control and communication in the Animal and the Machine*. Cambridge, MA: MIT Press, 1948.
- [2] W. Maner, *Starter Kit in Computer ethics*. Hyde Park, NY: Helvetia Press and the National Information and Resource Center for Teaching Philosophy, 1980.
- [3] P. Brey, "Disclosive Computer Ethics," in R. Spinello and H. Tavani (eds.), *Readings in CyberEthics*, Sudbury, MA: Jones and Bartlett, 2001.
- [4] Floridi, L., "Information Ethics: Its Nature and Scope," *Computers and Society*, 36(3): 21-36, 2006.
- [5] Floridi Luciano & J. W. Sanders, *On the morality of artificial agents*, *Minds and Machines* 14 (3):349-379,2004 [Online]. Available: <http://philpapers.org>

- /rec /FLOOTM-2
- [6] Matthew Wayne Seeger, Timothy Lester Sellnow, Robert R. Ulmer, Communication and Organizational Crisis, Westport,CT: Praeger, 2003.
  - [7] Sam Frizell, (March 10, 2014). 6 Mysterious Airplane Disappearance in Aviation History[Online]. Available: <http://time.com/18358/malaysia-airlines-flight-mh370-disappearances/>
  - [8] Mikey Smith, (March 09, 2014). World's 10 most mysterious plane disappearances and strangest aircraft crashes [Online]. <http://www.mirror.co.uk/news/world-news/missing-malaysia-airlines-flight-worlds-3220716>
  - [9] D.A. Small, & Loewenstein, G., Helping the victim or helping a victim: Altruism and identifiability. Journal of Risk and Uncertainty, 26(1), 5–16, 2003.
  - [10] D.A. Small, & Loewenstein, G., The devil you know: The effect of identifiability on punitiveness. Journal of Behavioral Decision Making, 18(5), 311–318, 2005.
  - [11] T. Kogut, & Ritov, I., The "identified victim" effect: An identified group, or just a single individual? Journal of Behavioral Decision Making, 18, 157–167, 2005a.
  - [12] T. Kogut, & Ritov, I., The singularity effect of identified victims in separate and joint evaluations. Organizational Behavior and Human Decision Processes, 97, 106–116, 2005b.
  - [13] BBC, (March 30, 2014). Pilot-ATC Radiotelephony Transcript [Online]. Available: [http://www.bbc.co.uk/news/special/2014/newsspec\\_7440/transcript.pdf](http://www.bbc.co.uk/news/special/2014/newsspec_7440/transcript.pdf)
  - [14] Amie Tsang, (17<sup>th</sup> March 2014). Timeline: the search for Flight MH370. The Financial Times [Online]. Available: <http://www.ft.com/cms/s/0/71254356-ab35-11e3-8cae-00144feab7de.html>
  - [15] Smart Cockpit.com. (2014). B777-Communications [Online]. Available: <file:///C:/Documents%20and%20Settings/friend/My%20Documents/Downloads/B777-Communications.pdf>
  - [16] Geoff Brumfiel, (March 14, 2014). The Difficulty Of Making A Modern Airplane Disappear [Online]. Available: <http://www.npr.org/2014/03/14/290242398/the-difficulty-of-making-a-modern-airplane-disappear>
  - [17] Scanlon, T. Joseph and Suzanne Alldred, "Media Coverage of Disasters: The Same Old Story" in Barclay G. Jones and Miha Tomazevic, eds. Social and Economic Aspects of Earthquakes Ithaca: Cornell University and Ljubljana: Institute for Testing and Research in Materials and Structures pp: 363-375, 1982.
  - [18] Adam K. Raymond, (March 2014). A Timeline of the Malaysian Government's Many, Many MH370 Screw-Ups. New York News and Politics [Online]. Available: <http://nymag.com/daily/intelligencer/2014/04/malaysian-governments-many-mh370-screw-ups.html>
  - [19] By Deborah Dupre, (March 31, 2014). Malaysian Airlines Timeline, Flight Path, you've not been told [Online]. Available: <http://beforeitsnews.com/events/2014/03/groundbreaking-censored-malaysia-airlines-timeline-flight-path-exposed-2432900.html>
  - [20] Sebastian Anthony, (April 7, 2014). Flight MH370 black box pings possibly detected, narrowing the search area [Online]. Available: <http://www.extremetech.com/extreme/179112-how-satellites-tracked-down-flight-mh370-and-why-we-still-cant-find-the-plane>
  - [21] Paul Armstrong, (March 25, 2014). Search for Malaysia Airlines Flight 370: the technology [Online]. Available: <http://edition.cnn.com/2014/03/24/world/asia/indian-ocean-search-for-mh370-hardware/>
  - [22] Bruce Dorminey, (April 09, 2014). Major Break In Detecting Malaysia Airlines MH370 Black Box Pings [Online]. Available: <http://www.forbes.com/sites/brucedorminey/2014/04/09/searchers-for-malaysia-mh370-detect-two-new-electronic-pings/>
  - [23] Bernama, (April 9, 2014). The Star online [Online]. Available: <http://www.thestar.com.my/News/Nation/2014/04/09/MH370-search-continues/>
  - [24] Reuters, (April 19, 2014). MH 370 flight recorders search to be completed within seven days [Online]. Available: <http://www.theguardian.com/world/2014/apr/19/mh360-flight-recorders-search-to-be-completed-within-seven-days>
  - [25] Charlie Campbell, (April 18, 2014). The Reason we can't find MH 370 is because we are basically blind [Online]. Available: <http://time.com/67705/mh370-ocean-oceanography-sonar-exploration/>