

Electronic mail as possibility of inapt communication

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Abstract - Electronic mail can be observed from several aspects. Within conditions of wide computer application and general network, it can be analysed as evolutionary form of traditional mail. However, electronic mail should basically be regarded as form of human communication regardless to the form of its realisation. Every communication of human nature connotes certain forms of human behaviour. Accordingly, every deformation of such behaviour can be observed through a prism of generally accepted social norms. Thereby the participants of communication process can be put in a situation that should be isolated, removed or sanction. Paper demonstrates a summary approach and treatment of different attempts of deceptions through electronic mail belonging to one author with author's classification of severity of possible felony and possible protection. Paper also tries to define disadvantages and/or lack of contents in education, within field of communication and post traffic in new conditions.

I. INTRODUCTION

From the historical point of view mail can be considered as product of human needs for communication. Generally speaking, communication can be perceived as interaction between two or more elements oriented towards each other. Theory of communicational systems usually defines communication as bipolar relationship between emitter and receiver of matter exchanged during the communication. Usually the matter is presented by data or information which emitter and receiver send to each other in a form, usually named message.

Theory of information defines the whole process as communication channel. From this aspect such communication can be observed as generator of changes in a society. It is indisputable that human need for communication has led to articulation of voices, creation of speech and language, in general. As long as the participants in communication can communicate vis-a-vis, language has been and it will remain a sufficient instrument of communication. Language is here seen as any form used for expression or moderation of message, understandable to both participants of communication. When physical dislocation between emitter and receiver occurs, language forms are no longer sufficient to continue normal communication process. In the last

century, somewhere in the beginning of the seventies, Prof. Božo Težak has formulated e-t-ak-s-a complex claiming that all information structures, throughout the history, in their forms and functions emerge conceptually as factors of emission, transmission, accumulation, selection and absorption (Figure 1) [1].

Historical development of this complex begins with relationship between elements e-a and language communication. When physical dislocation emerges, complex necessarily includes new factor t – transmission, that is, it requires modes that will provide transmission of information, data or anything that will transfer message. In the history of development of human activities, this could be described as a moment when post and traffic emerge as continuously organised activities.

II. POST AS COMMUNICATION (FROM SPEECH TO INTERNET)

Probably from the very beginning a need for organised transmission of messages originates and equates organisations and messages on the level of synonyms so both institutions are defined as post. Post as communication in principle indicated private relationship between emitters and receivers, while transmitter – post as organisation had to insure privacy.

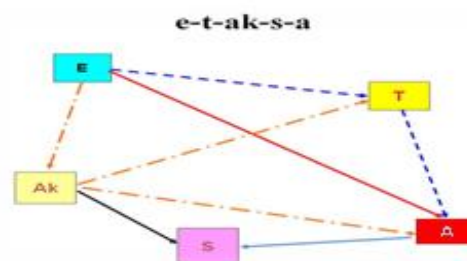


Figure 1: e-t-ak-s-a complex

As organisation, post emerges at institutionally highest level of social constitution at the state level. Since the communication between two persons is their personal matter in all elements that define it, post necessarily should regain all specificities that ensure private relationship between emitter and receiver.

Communication on level of e axis has altering character since emitter and receiver change their roles when initiating each message. The content of message – post is truly a subject of protection and privacy is protected through message itself, by preventing it to be mishandled or misused in any other way. Sometimes communication can have a public or half-public character, especially when emitter and receiver represent some organisation. Even when communication isn't of private character, providing generally accepted norms that follow communication, is necessary.

Naturally that ensuring private treatment has led to line of other activities, such as legal protection, respecting the general ethical and moral norms which violation could lead to sanctioning factors which were their initiators.

All the above mentioned, defines post as communication into the legal frames where it is described as legal category. Since post – message can become a subject of manipulation and misuse it can also become a subject of dispute that requires legal regulation. However, it's not just the message – post element of possible dispute. The complete communication as process can be disputable and become a subject that requires a legal regulation.

From the legal aspect, communication channel is place where felony can occur, while material circumstances and factual state remains isolated in transmission channel of post as institution. In prior school educational programmes, pupils learned how to write a letter or written message by emphasising ethical and moral rights and precise writing and expression. Written communication demanded time for writing and transferring the written.

Development of science and technique and increase of human knowledge will lead to growing needs of communication, in line with post as form of communication. Historically this was a time of need for accumulation of knowledge and occurrence of libraries, museums and archives. Basic poles of e axis in this frames loose firm personal relationship. However, this only underlines a need for tighter regulation of the complete process in sense of respect towards socially general accepted norms. Still, the increased need of communication also generates negative influence on communications themselves, reflected in need for greater speed, that is, shorter time of data transfer. Consequently, the increased speed will regularly decrease quality of the complete communication process that will open up a space for irregularities that demand proper treatment.

Development of personal computers moved personalisation of communication from realistic to virtual frames, while relationship of basic factors between emitters and receivers harmonises with new circumstances. Communication is still being treated as it has been in original terms, which can be seen in the very name of communication – electronic mail. Though the original name remained, it is clear that original post, that

is, its form that preceded development of computers and virtualisation, basically detained only communicational forms of un-material messages. Web, that is, electronic network, overtakes complete communication, but the problem of its protection remains and occurs in a completely different scope.

III. RESEARCH

Traditional process and organisation of post and post traffic are still under state governance. Regulation of post traffic is determined by related law of post traffic. This one is defined in Republic of Croatia as Law of post [2], while in Bosnia and Herzegovina it is named as Law of post traffic [3]. Laws differ in smaller details and they prescribe conditions and ways of organizing the post traffic. Law includes sanctioning of irregularities by determining shapes of indemnification of eventually damaged party and sanctioning of offender. Both mentioned laws define forms of post packages and security conditions of their transfer. They also precise scope of activities and duties of all participants of post traffic both inner employers and the receivers of packages as basic users of post traffic. Traditional form of post traffic includes the complete package of services of which only the written forms will stay in electronic environment. Naturally, term package will also create its virtual form as attachments to electronic mail. That way, electronic mail, with no possibility of physical shipments, can be considered as segment of the usual post traffic, but also the evolutionary form of classic mail for written packages.

Since mode of transferring electronic mail is connected to communicational infrastructure, regulation of electronic mail is usually determined at state level, but usually under the power of state agencies such as agency for telecommunication or electronic media. Within frames of those laws, electronic mail can also be defined.

For instance, electronic mail isn't defined neither in [2] or [3], opposite to Law on electronic communication of Montenegro where it is clearly stated that:

“**Electronic mail** is every communication in form of text, voice, sound or picture, transferred through electronic communication network, that can be preserved in network itself or in terminal equipment of receiver, while he overtakes it”[4].

However neither the mentioned law nor similar ones in other states do not precise sanctioning of inappropriate behaviour in electronic mail traffic. Research conducted for needs of this paper tried to determine, in compliance with examined basics of legal regulation of traditional post traffic. Research data have been acquired on personal computer by electronic mail of one of the authors for time period of one and a half year. Accumulated data are sorted and classed according to ruled determined by authors, in line with their field of interest.

Namely, the subject of consideration in this paper is electronic mail, but authors also tried to appoint certain hypothesis starting with their own perspectives. That way problem is observed from organisational point of view, as post traffic is concerned, legal regulation of the same and basic information terms and relationships. Similarly, the following hypotheses have been defined:

1. Electronic mail is form of communication in which senders aren't always familiar or are wrongly presented, by which they are in offence.
2. Sender doesn't have to have legally right motivations for sending the mail so he can do damage to receiver, on purpose or vice versa.
3. Sanctioning of offences or inappropriate behaviour within frames of electronic mail is usually more damaging then in case of classic post and other forms of communication.
4. Motivations for inappropriate activities in electronic mail can be classified but there is no common classification.
5. Criterion of classification is determined by research goal and is simultaneously goal of research.

A. Data

Selection has been made among 620 of totally 813 attempts of communication via electronic mail by unfamiliar sender. Data relevant to research are:

B. Eventual personal data of sender

Personal data of sender are usually wrong that is incorrect. Wrong identification is consequence of fact that senders are aware either of impossibility either unwillingness of receiver to spend certain amount of time to research reliable and safe data.

Since majority of senders ask feedback information and making the contact with receiver, certain data of motive and purpose of sender cannot as possible feedback message be checked in way to define whether sender is malicious or not.

Of totally 620 attempts to make contact, 324 senders or 52.26% of them, return messages directed towards other electronic addresses so their intention can that way be perceived as suspicious.

C. Domain and sub-domain, location

Domain and sub-domain in which account of receiver is usually of general character such as .com, use 467 out of totally 620 or 75.32% senders, while 50 or 8.06% use domain .org. Small number of senders uses localised domain .com, so at least this enabled detection of area from which electronic mail arrives.

D. General location of sender

Generally, a location without deeper analysis of data, such as attempt to detect IP address of computer, couldn't have been determined. More precise determination could have been possible only in case of partial self-exposure, but even then data could only partially be received as correct. As far as geographical location is in question, the majority originated from western countries and Canada and USA, together with China, Hong Kong, and smaller part from India. At the end of 2011, larger number of attempts was registered from the ex eastern block and smaller number from the Russian Federation. The interesting fact is that local attempts haven't been registered.

E. Motive of a sender; Overview of data and reasons of the research; Defining the hypothesis

The analysis of communication between sender and receiver of electronic mail, for purposes of this paper, assumed following conditions and relationships:

- Sender and receiver are participants in communication of a common-post type, but in a specific environment
- Environment is a combination of a real and virtual milieu, with real environment partially included in the process
- Sender and receiver are voluntary participants of communication so they can end it any time they want to
- Sender and a receiver do not have to know each other at the beginning of a communication
- Motive of communication at the very beginning isn't familiar to both parties of communication
- Communication is timely discontinued, but as a process it had its duration time which isn't defined at the beginning of a communication
- Eventual consequences, unfavourable for sender and receiver can be presumed but not familiar

It has already been mentioned that subject of this research is misuse of electronic mail, with goal to define treatment of such possibilities from the concept of post traffic in virtual frames, treatment from standing points of information sciences and legal terms – especially of violation legislation. Inappropriate electronic mail is, in this research, considered as possible felony, or, violation, to be more precise. Therefore, this form of post can be called a deception. From that aspect it is necessary to determine factual and material circumstances that enable the process of communication. Hypothetically it is possible to assume partial consequences of such activity, but under condition that, at least to some extension, a motive of initiating communication – sending mail – is clear both to sender and receiver. Precisely the clarity and familiarity of motive will define severity of violation and its possible consequences.

In circumstances when sender and receiver do not know each other, motive can only be assumed. Data collected and classified in the research imply that final motive is always economic benefit of sender, since he is the initiator of the process. In most cases motive is concealed by mutual benefits, but the final intention is to deceive the receiver. Smaller portion of cases belongs to the area of marital and sexual offers, though cases which can be treated as business criminal, have also been registered.

F. Day when post has been sent, Period of sending mail

Sorting and classifying accumulated data has been made in way that primarily explains assumed motive of deception and hypothetical circumstances in which it has occurred. Besides attempt to locate the sender and collecting data of him, analysis of time in which the message has been written and sent has also been made.

Why time matters? The assumption is that majority of messages hasn't been created in standard working time. That would be period between 08.00-17.00h, on a working day in a week. If they have been created in that period, they could have been written in a work place, under condition senders are employed. Have they been written on weekend, they have probably been written in household environment? The statistics of mentioned assumptions can be seen in graphs at Figure 2 and 3.

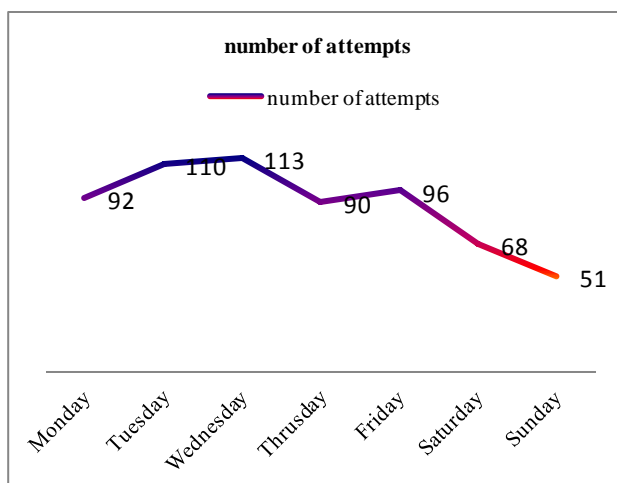


Figure 2: Number of attempts in working days

Diagram at Figure 2 implies most post has been sent during the mid-week, that is, on Wednesday, while on weekend activity has been reduced for almost one third. Therefore further analysis has chosen Wednesday and Sunday, that is, day with most and least activities.

Diagram at figure 3 suggests that attempts of communication are being grouped around lunch break and they prolong till the end of work time during the working days, but also on weekends. Assumption is that senders have more spare time in these periods, while further analysis of other days led to a conclusion that distribution on rest of the days is similar supported by a

remark that most attempts are being realised between 13.00-21.00 hours.

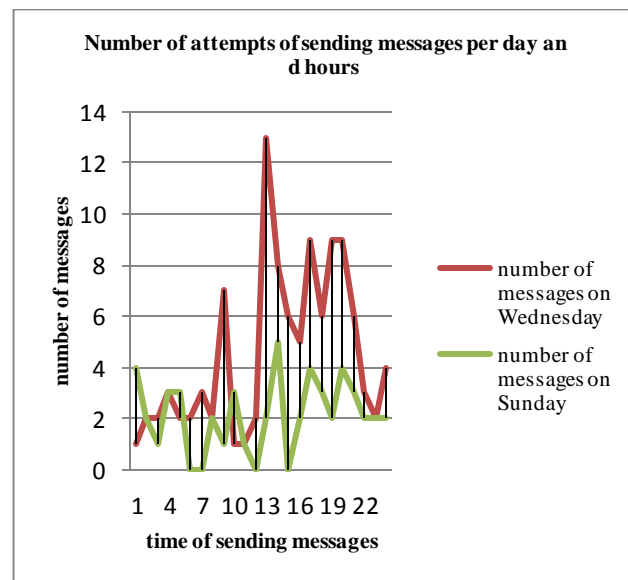


Figure 3: Number of attempts of sending messages per day and hours

Similarly, larger activity during the week can imply how messages are mostly sent from work place. Naturally, under condition sender is employed. In that case, sender is in another type of offence – malpractice in performing work activities with possible damage to employer.

G. General definition of post content

All electronic mail has unified form on the computer screen and possibility of different forms in the attachment package. Limitations which occur in formal sense are connected to telecommunication infrastructure and its possibilities. Considering the continuous development of technique and technology in line with network's development in general sense, it decreases this particular problem. Besides unified form where sender, receiver, secondary and tertiary receiver are named, usually the mode of protection against the unwanted receivers are mentioned.

However, importance lays in the content of mail: under the post's content one can consider object through which communication is performed, with especially important semiotic features.

Namely, all electronic mail is written in certain language, meaning its content underwent specific syntactic rules. Further on, content has to possess certain meaning, that is semantic side that allows for certain conclusion in case of urge for further analysis. The most sensitive segment refers to pragmatic side which (electronic) mail has to ensure.

This is the area of speculations, which in case of offence and dispute truly are a private matter. Clearly, there is at least triple pragmatic approach in each electronic mail. In disputable situation, when defending its principles, sender will anticipate same problem in

ways different to the receiver, or, electronic services provider, that is, Transmitter.

In accumulated data subject to this research, basis has been an attempt to recognize pragmatic approach of sender, from the aspect of receiver and his pragmatic point of views. That would be the following criterion for classification and categorisation of selected data. Criterion was made by author, expressed by attempt to recognize sender's primal goal. Analysis has been given in graph that follow at Table 1.

The majority of messages were of financial character, where offer was connected to intermediation in transference of great sum of money or notions of sudden prizes in a variety of games and lotteries. Second in the hierarchy is type of optional messages with the attempts of asking the humanitarian consents to different actions.

TABLE 1: FREQUENCY OF BEHAVIOUR WITH FOCUS TO THE CONTENT

Focus to the content	Frequency of behaviour
Pharmaceutical	6
Financial	215
Humanitarian	46
Immigration	9
Computer	2
Optional	160
Educational	4
General	2
Job	18
Business	3
Sale	1
Production	1
Sexual	18

The third type of messages was connected to health and it tried to persuade receiver to buy the published products. The other messages are of irrelevant character and they usually can be defined as previous three when certain details are being absorbed. Data at Table 2. demonstrate the final motive of deception. The raster clearly alludes of money as the final goal. Data at figure 4. Shows the risk evaluation captured in possible answer of a receiver is displayed.

H. Possible action of the receiver

Receiver of message is put in situation where he can decide how to act when receiving e-message of suspicious and unfamiliar content. Any kind of acceptance of such message can place him in the position of victim, that is, deceived: in that case, consequences of communication can be damaging to small or great proportion. It is not impossible that both sender and transmitter both suffer the consequences. The recent literature offers guidelines for reactions in such

situations, but, regardless to the global character of electronic mail, majority of these are of local character.

TABLE 2: STRUCTURE OF MESSAGES TO OFFER AND FINAL GOAL

Final goal of the fraud	Number of messages
Diploma	1
Loan	34
Medicines	2
Lottery	33
Real estates	2
Money	294
Sub-category	1
Help	17
Offer	232
Products	1
Disputable	2
Gold	1

For instance, [5] embeds descriptions of mutual programs, techniques and technologies used by deceptions together with instructions to the citizens of Canada how to behave in described situations. Similar descriptions and instructions can be found in books and other relevant materials. [6] and [7].

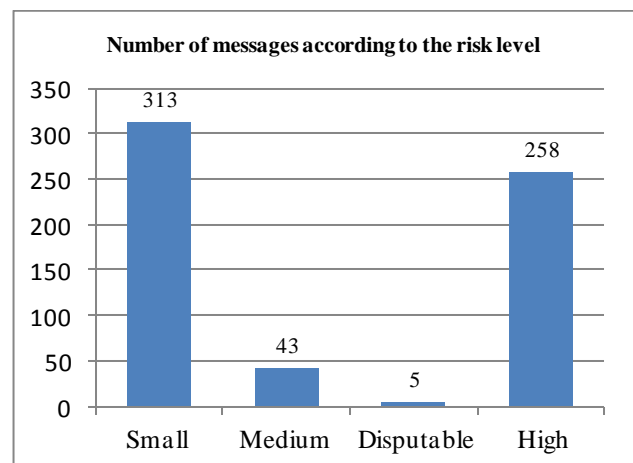


Figure 4: Number of messages according to the risk level

The most instructions begin with advice not to open mail received by unknown sender. Afterwards, if mail doesn't have subject, it is also recommended not to open it. Technical protection refers to a recommendation to use safe web and e-mail client.

IV. PROFILING THE ELEMENTS OF COMMUNICATION VIA ELECTRONIC MAIL

Inapt communication in form of steal and deceptions over the internet and e-mail are today a part of everyday life. So far, this refers only to that part of population which has an opportunity to use internet and electronic mail. It has already been mentioned that this type of communication recognizes three basic members and/or

elements: sender, transmitter and receiver. Due to proper treatment of participants and objects transmitted in that same communication, it is necessary to profile them.

All irregularities do not have to be intentional and regularly they are a consequence of ignorance and lack of information. If they are planned, then it is certain the one who initiates disputable processes has skills required to produce them. If the final result of inappropriate electronic mail is deception or steal, the initiator is a felon who needs to be sanctioned. If these initiations happen in work place, it puts the additional legal weight and requires strict treatment and sanctioning [8].

Receiver who doesn't know all techniques and methods a felon can use by initiation, that is, consent to the process of deception, bears a part of responsibility. The third part, which isn't irrelevant at all, is eventual irresponsibility of service provider or, to put it in traditional language, post operator.

From the legal aspect, profiling the operator is the simplest solution since the global nature provides more advantages than disadvantages. Finer profiling of sender and receiver requires psychologist that exceeds frames of this paper

V. LEGAL CONSEQUENCES

Legal treatment of traditional post traffic has its history and long and good theory and practice. Constituting factual and material condition in such circumstances doesn't have to be a problem, though extreme specificities are possible. Post communication includes usually two mail participants though those two don't necessarily have to be the individuals. Traditional mail doesn't recognize circular letters and their possibilities. However, when frontiers of the real world are replaced with virtual surroundings, possibilities of circular communication become boundless. Then even the minor financial investment – a result of deception can reach value beyond common sense. This is a moment in which electronic mail thoroughly moves away from norms that rule traditional post traffic. It should therefore find ways of respecting the procedure. In traditional frames one can always find material evidence of attempt and eventual realisation of deception that can be used in a possible plea. In book [9] the authors indicate incompatibility of area which embeds electronic mail. In usage of ICT and electronic mail in work place, legal issues are being transferred to virtual scene by causing the confrontations unfamiliar to theory and practice of work legislation.

VI. CONCLUSION

This research didn't use concepts of: phishing e-mail, e-mail scam, web forgery, e-mail fraud and similar. All these terms define inappropriate forms of electronic mail which demand more adequate standardisation, not just in

information environment, but also in legal environment, specific by its aridity and strict unambiguity. To someone Phishing e-mail can sound symbolic and funny, but legal aspect is much more the "fishing", even when it's made in a virtual sea.

Every partial approach is necessary, but the mentioned triumvirate of attitudes is essential since it can provide holistic approach that can protect every victim of a fraud. Regardless to the virtual environment, a victim is still a real person.

The last, but not the least important, goal of this paper is to imply insufficient education of all, present and future participants of electronic mail. Insufficiency is equally apparent in regular and specialist educational programs. Trends in development and tendency to regulate this area represent new questions that should be qualitatively analysed and elaborate.

Electronic mail is evolutionary mode of human activity known as communication, with the first meaningful communication somewhere at the beginning of the human kind, but it will definitely not disappear in woods of ultra liberal possibilities that will try to disable regulations such as "ACTE". Though this isn't appropriate, a reader is instructed to closely analyse the work of author [10].

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