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**Towards a New Communication
Framework for the Management
of Email Selection and Usage –
A Literature Review**

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Towards a New Communication Framework for the Management of Email Selection and Usage – A Literature Review

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Abstract

This paper explores the underpinning concepts used to explain email usage. It generates new relationships between these concepts to generate a new communication theory. This theory is used to explain how email may be selected as a means of communication in given situations with a view to reducing waste generated by inappropriate use of this technology.

The theory of media richness is explored to place it in the context of a modern working environment. This enables new conclusions to be drawn on the importance of relationship as an essential criterion in selecting communication media. The link between this theory and organisational culture has also been explored for the first time to demonstrate how shared cultures can impact upon the appropriateness of different communication media.

The Transmission Model of communication is analysed to judge whether the physical phenomenon known as ‘noise’ can be considered as a conceptual construct which would permeate all communication thus linking with perceived richness and organisational culture in affecting communication choice.

Contingency based selection models are explored to determine the importance of all situational determinants when making a selection of communication media rather than attempting to apply a simplistic approach.

From this research, a number of criteria have been indentified from which a new contingency based approach has been developed. This differs significantly from that previously proposed in that it prioritises selection criteria to allow for an easy application by the user and that it provides alternatives to using email which are contingent upon application of the other criteria proposed in the model. The theoretical model provides a means by which waste may be reduced in organisations by reducing the number of emails and therefore the time wasted generating and dealing with them.

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Introduction

Having been developed in the 1970's, early recognition by Bengston (1980) focused on the perception that email would offer a greatly improved communication service by increasing speed and reducing cost. As a result the uptake of email as a means of communication in business grew rapidly. These benefits were still widely recognised some years later with authors such as Holliday (1999), Russell and Cohen (1997) and Yu and Yu (2001), who further considered flexibility, wide reach and reduced cost as being primary benefits and therefore reasons for adopting email systems.

However, Bengston (1980) did recognise that there were likely to be issues related to the uptake of email systems, especially surrounding management of the use of email systems within organisations. These issues include email overload phenomenon, poor understanding of message intent, negative reactions to content, abuse of email systems, electronic bullying and harassment and users opting out of the system entirely.

These views were also taken by Denning (1982), Hiltz and Turoff (1985) and Whittaker and Sidner (1996), Whitaker et al (2006). Despite recognition over the issues surrounding email adoption across a 26 year period, little evidence exists to demonstrate that the issues have been actively tackled, let alone solved. Recent evidence suggests that email load continues to rise with Fisher et al (2006) finding an average of 87 messages per day being sent.

Sumecki et al (2010) recognised the link between email load and the time taken to deal with it. The load on time and actual message load is disproportionate depending on how well users are able to cope with load and how appropriately the medium is used. Silverstone (2010) further recognised that time, especially wasted time, meant that organisations were losing money by making use of a communication medium that was meant to save time and money.

Silverstone (2010), observed a time cost of £1.2 million generated by staff using email to communicate. On top of the cost of the infrastructure, maintenance and licences, this represents a large financial investment. During this study, 52.5% of the respondents felt that at least some of their time was being wasted through the use of email. Reasons for this included duplication of messages, inappropriate content, irrelevant messages, poorly constructed messages that required further clarification and examples of management through the use of email.

Ongoing concerns have been observed about the use of email, however, little evidence exists to suggest that these issues have been either recognised or addressed. Furthermore, theories and practical solutions strongly propose the reduction in email usage but do not provide effective guidance on how to select a suitable alternative based upon situational factors or guidance on how to identify situations where email is still a valid communication method. In an attempt to do rectify this, this paper revisits the work of a number of theorists in this field such as Daft and Lengel (1986), Contractor and Eisenberg (1990), Markus (1994) and Ngwenyama (1997) as well as some of the earliest theorists considering communication such as Shannon and Weaver (1949).

Theories about email use and practical issues have been revisited and reconsidered to propose a new multidimensional model to allow users to mitigate the most common issues and to use email where it is appropriate, and other use methods where it is not.

Time, Speed and Distance

Media Richness Theory (MRT) as presented by Daft and Lengel (1986) was the first to consider how effective email is as a means of communication in relation to other, more traditional methods. By considering the ability of a communication method to convey a message with the minimum of uncertainty and ambiguity (Daft and Lengel 1986), MRT places communication methods on a hierarchy of richness. The measures used were feedback, multiple cues, language and intent. Based upon these Daft and Lengel (1986) and later Rice and Shook (1990) concluded that email communication is the least rich means of communication alongside unaddressed memos and face to face communication is the richest. As such the recommendations are that where possible, email should be avoided in favour of face to face communication.

This simplistic viewpoint is still used in email guidance despite being widely discredited by authors such as Makus (1994), Fann and Smeltzer (1989) and Rice (1992). Tims (2011) shows that communication consultants still advise users to replace email communication with face to face communication wherever they can.

Whilst MRT provides a simple method of selecting the most appropriate communication method, it is severely limited by both its method and ability to provide an informed choice based upon situational factors. Fann and Smeltzer (1989), Allen (1994), Markus (1994), Ngwenyama (1997) and Dennis and Kinney (1998) all questioned MRT claiming that it does not consider real situations, only theoretical constructs. It does not reflect real life and does not allow selection based on anything other than a fixed scale which negates other situational factors.

Contractor and Eisenberg (1990) point out that the reason for this is the methodological paradigm upon which the original theory is built. The positivist approach focused on the mechanistic elements of communication and entirely ignored the influence of people, decision, opinions and actions. As such, if the theory considers a method to be less rich then it must be so, regardless of other factors.

As a result of these findings, Lee (1991, 1994) considered how the human element may impact upon richness. The studies concluded that interactions and relationships had more to do with how well a communication method worked rather than the mode itself. The relationship between users would mediate potential richness in a way that the original theory was unable to. It is from this that the concept of subjective distance is developed.

Subjective Distance and Culture

Subjective distance considers that a less rich means of communication may become more suitable in a situation where the impact of reduced cues is mitigated by the relationship between the individuals involved. By considering this behavioural component, the analysis of equivocality cannot be made without considering how individual's opinions and behaviours impact upon this analysis.

Less rich communication methods lack important cues as identified by Rutter and Stephenson (1979) including tone of voice, body language, facial expressions and, most importantly, the immediacy of feedback provided by communication participants. It is proposed that, as a result of a better relationship between the parties communicating, the cues can be replaced with experience and the ability to pre-empt responses during conversations. An individual can read and interpret an email whilst visualising the sender passing the information face to face.

Building upon the work of Lee (1991, 1994), as relationship factors improve, the perceived richness of a means of communication will improve. MRT cannot allow this subjective interpretation of richness, as a perception, due to the methodological limitations already discussed.

Further conclusions can be drawn about the practical aspects derived from analysing MRT. As Trevino et al (1987) points out, the original benefit of email, as argued by Bengston (1980) who suggested that managing time constraints and physical distance issues, may be more relevant than richness. Physical distance will reduce the practicality of a face to face meeting. This distance may also cross time zones making telephone conversations impractical. A subjective decision needs to be made as to whether the payoff in richness is worth it for the perceived gain.

The same can be said about the potential time saving benefits. It is important to note that time may not be necessarily saved by the originator in composing the message or the recipient in reading the message, time savings may be made in the delivery of the message over a long distance in a short space of time.

Both time and distance can be tempered by subjective distance. Regardless of physical distance, a large subjective distance may require a richer means of communication to communicate effectively. Over time, as the subjective distance closes, less rich means of communication may be considered.

Subjective distance, based on relationships, is a core situational factor that should be taken into account when considering how effective a means of communication is. A difficulty encountered is how to gauge the development of relationship in this case. If relationship is considered as shared experience (Contractor and Eisenberg 1990), then relationship can be considered in three different ways, professional relationships, personal relationships and relationships driven by a shared culture.

So far the idea of personal and professional relationships have been considered as a means of substituting cues into less rich communication methods to reduce ambiguity. A shared culture can also create a reduced subjective distance by identifying other common factors.

Huczynski and Buchanan (2001) considered that culture hinges upon shared values and beliefs. Trice and Beyer (1984) considered the shared history, ceremonies and rites as important components. These viewpoints can provide insights into the role of culture within organisations.

At a macro level, organisational belief sets, values, histories and ceremonies impact upon the workers. Organisational legacy will draw workers into the culture, whilst individuals will impact upon this and components will become entrenched. These may include language components such as acronyms and views on the usage of communication technologies such as email. Therefore, a degree of commonality can be assumed within the organisation, individuals are likely to possess certain reference points that are the same.

Daniels et al (1997) furthers this by concluding that any culture must exist based upon individuals sharing a common set of references for interactions. Whilst this does exist at the macro level (whole organisation or even at sector level), it may exist much more strongly at a micro level, by individuals within the same department or working group.

This idea is furthered by Manley (2000) who identified that different subcultures do exist within an organisation interpreting overall priorities in a different way depending on their values and beliefs. These subcultures may also possess a more detailed set of language components and dynamics of interaction. Different practices, values and rituals may also exist in terms of undertaking communication.

It is proposed that a better relationship and, therefore, reduced subjective distance can be assumed within subcultures. Common expectations about communication may exist and therefore a less rich means of communication may be considered more rich and vice versa. Subcultures may also impact upon perception of overload therefore strengthening the position that subjective distance is a key factor that must be considered in the selection of an appropriate communication method.

Noise and Overload

Having considered the central themes of time, speed and distance it is essential to consider how selection of communication methods can impact upon effective communication. It has already been suggested that alternative methods may be used when the factors of time, speed and distance are taken into account but it is important to consider how the selection of a method, having taken those factors into account, may impact. To do this, two key concepts were explored, the theory of Noise, as initially suggested by Shannon and Weaver (1949) and the concept of Overload, in particular email overload, as suggested in the first instance by Denning (1982).

The findings from the investigation of both Noise and Overload suggest that interference may be introduced into the communication process either by the inappropriate selection of communication method considering the content and recipient or by inappropriate use or overuse of a communication method leading to overload.

Interference should be viewed as a situational determinant which has an effect on the selection of communication media. Subjective issues are introduced through interference to supplement the more objective considerations made through MRT. An important factor in interference is the support it lends to the importance of relationship in communication media selection.

Initially, Noise theory introduced the idea of a physical interference, such as a noise on a telephone line, as a means of reducing communication effectiveness. Through the work by such authors such as Carey (1989), Neisser (1983) and Orlikowski (1992) it is shown that noise may be viewed as a concept as well as a physical entity.

When noise is considered as a concept, it may be introduced at any point within the communication process. The conception of the message, choice of language, delivery method, decoding and understanding can all be influenced by noise. Despite the potential for noise to be introduced at any point in the process, it is suggested that the communication method can have the greatest influence on the generation of noise.

Considering the communication method may have an impact upon the conception of the message as well as the language used. For example, a message containing a formal disciplinary notice for a member of staff would not be transmitted via email. As such the language used would avoid the traits that have become accepted in email. If email was used it may introduce noise. Similarly if the message was changed to make it suitable for email then it may not be correctly structured, that in itself would introduce noise.

Taking the example further, the receiver would not necessarily be responsive to the message if delivered through an inappropriate medium such as in the examples demonstrated by Taylor et al (2004). Delivering the formal disciplinary via email may generate a negative response which could alter their ability to interpret the content correctly.

The potential for introducing noise has been shown to spread further than just as a physical interference created by the communication method. As a concept it can be considered that noise may be introduced anywhere in the communication process but that the selection of the method can have an impact on the chance of noise being introduced throughout the process.

Supporting the exploration of Noise is the consideration of Overload and Email Overload theory. A detailed analysis has been made of this as it covers the possible effects of overload as well as appropriate coping methods. Two important conclusions can be drawn from the exploration of these theories. Firstly, the implications of poorly managed overload can have a further detrimental effect on communication. Secondly, the responsibility for overload needs to be spread between the recipient and their coping strategies and the sender and their choice of communication method.

Denning (1982) suggested that email would not replace other means of communication; it would supplement them and increase the volume of communication as a result. Therefore, the need to manage the use of email is considered to be an important part of email overload theory. A singular definition of what constitutes overload is difficult to produce as the perception

of overload will differ from person to person. If one is unable to recognise the symptoms of overload and put in place suitable strategies then a detrimental effect on communication may be observed.

Ingham (2003) considered these effects which included a poor response to the use of email as well as potential for a wholesale withdrawal from the system if the user felt that they were being excessively loaded. These effects can be applied to any communication medium suggesting that the overuse of a means of communication can have a detrimental effect on the response the user has to the communication medium.

To manage the possible effects of email overload, theorists discussed the need for a multifaceted approach where the systems were refined to allow the user to make better use of them (Jackson et al 2003), the users need to be educated and encouraged to make better use of the improved systems to manage their load, (Denning 1982, Hiltz and Turoff 1985, Whittaker and Sidner 1996 and Whitaker et al 2006), and that senders should be mindful of the possible impact upon recipients.

In order to achieve better management of email load, it is essential to guide users to manage their load better and to be considerate of their actions on the load of others. It is also suggested as a result of the theories explored that a non-productive method of managing email load may be to offload and spread it to others. Whilst other strategies suggested are positive management techniques, encouraging users to deal with their message load whilst being mindful of their sending habits, offload is the opposite. It would allow users to reduce their loading by moving it to other people. Not only is this a non proactive management technique, as the user is not taking responsibility for the outcomes, it will actively increase the load of other users.

Sender's communication load and that of recipients should be the prime factor in considering which means of communication should be used. For example, an email used in a situation where it is not warranted, to communicate a complicated set of instructions, or where the message is poorly constructed, may require responses which would increase the load upon the original sender.

The selection of communication medium based upon the habits of the sender and the recipient may have a role in reducing the loading upon both. By avoiding the possible negative implications of overload, users may enjoy a better relationship with communication media and therefore experience better communication. Currently missing is the decision making process by which the alternatives in a given situation are decided upon whilst considering the senders needs and those of the recipients.

To ease the overall decision making process about which means of communication to use, an approach needs to be sought that would allow a user to take into account a number of situational determinants and to make a decision based upon these. Contingency theory provides an effective means of viewing the different factors that may impact upon a decision.

A Contingency Theory approach that focuses upon communication has identified a number of factors that may impact upon communication media choice. Goldhaber (1993) considered the impact of gender and education levels

on communication media selection. Pizzutti and Fernandes (2010) further considered that contingency would dictate that, as less personal means of communication are used, dissatisfaction in the communication would increase. Van den Hooff (2005) also considered that situational determinants would have a direct impact upon the effectiveness of different means of communication.

The consideration of different situational determinants would allow the user to make a more informed decision about which communication method to employ. Contingency theory also suggests that the user would require a set of guidelines to follow. The decision itself and the person making it are the key components in a contingency approach. As such the individual and the process cannot be divorced. This has a further implication for MRT as originally proposed, as the approach used considered the media in isolation from the users.

Contingency approaches tend to emphasise the use of a multidimensional approach such as that proposed by Van den Hooff (2005). This approach allows for each contingency to be viewed as being on an equal footing and also allows the user to tackle the issue from different angles. However, it does not provide a strong structure for users to follow. A linear approach may allow users to work their way through a series of options and come to a decision based upon the outcomes. In developing a means of selecting an alternative to email communication further work would need to be undertaken to establish whether a multidimensional approach or a linear approach would be most preferable. If linear, assessments would need to be made about the relative importance of the factors to allow for a hierarchical model to be developed.

A Theoretical Framework for Email Usage

It is now possible to suggest a theoretical framework upon which alternatives to email communication can be selected. This theoretical framework can then be appraised by users and implemented as part of a management strategy.

Through careful consideration of current and past research it has become clear that a method of selecting an alternative communication method, when email would be the primary option, needs to be based upon contingencies and take into account a wide range of factors, thus, addressing the criticisms raised by Ngweyama (1997). A total of 12 key determining factors have been identified through the literature review. Some of these relate to highly specific, focused elements whilst others relate to broader concepts that need to be included within the model.

The identified components will be split into two categories. The first will deal with generic considerations which will impact upon the selection of an alternative mode of communication. Subjective distance, objective distance, scope of communication, requirements for response and time pressures are considered to be generic components which will guide the user towards the alternative.

Having considered the factors that have led to the initial selection of the method of communication, the factors specific to each will be considered. Once the method has been selected, the user can then consider factors that are

specific to the potential benefits and drawbacks of the selected method. If any of the decisions results in the method being deemed inappropriate then the user will be taken back to stage 1 to reconsider their options and look at alternatives. As the options progress the user will be offered alternatives that represent variations upon the theme that they are considering at that time.

The proposed model demonstrates the multidimensional factors in the Email Alternative Selection Tool (EAST) is illustrated in Figure 1 below. A key strength of the model suggested is that it allows for situational determinants to be used to make a decision. This follows the initial suggestions made by Van Den Hooff et al (2005) who presented a meta analysis derived model for a decision making process for email users. Where key differences are found between the proposed model in this thesis and previous work is that other contingency based models such as Van Den Hooff et al (2005) do not provide for the selection of an alternative means of communication based upon the contingencies present.

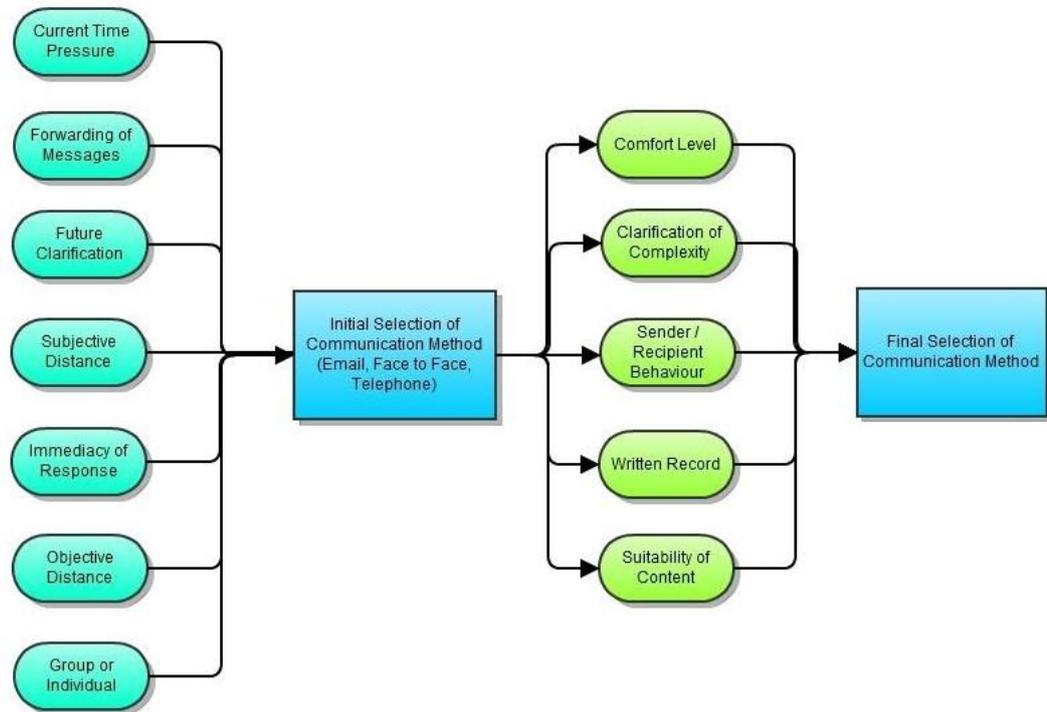
By providing a range of alternatives, EAST provides a multi faceted tool that is not a one size fits all approach to selection of a communication method. As a two stage process the contingent factors are split between those that would inform an initial selection of a communication method and those that would need to be addressed once a method had been selected either to confirm or refute the selection made in the first stage. As such this tool represents a more comprehensive, whilst greatly simplified, approach to decision making about email use.

A further strength of the proposed theoretical model is the range of literature, themes and approaches employed to derive the key situational determinants that form the basis of the model itself.

However, the successful practical employment of the theory will rely upon subjective assessments being made by the users. Detailed guidance will need to accompany each of the choices to allow the user to arrive at the most appropriate outcome. It is proposed that some of the decision making may be incorporated into the software of the email system to aid the process.

In the generation of this model newer Computer Mediated Communication methods have not been included. Net meetings, instant messenger software and text messaging systems, which blur the boundaries between more traditional means of communication, would further complicate the model. Whilst this may weaken the proposed model it is considered an acceptable omission, as the primary aim of the model is to reduce reliance on email by assisting users to make use of alternatives.

Figure 1. Diagrammatic representation of a multidimensional model for the Email Alternative Selection Tool (EAST).



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