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The influence of employment roles on email usage profiles: A study of the Welsh Further Education Sector

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Abstract

The role of relationship in communication has been well established. Shared culture has been postulated as an influencing factor in relationships and therefore in the effectiveness of communication between individuals. The role of culture and the way email is used within organisations at all cultural levels has been highlighted as an important factor. This paper takes these theoretical viewpoints and tests the influence of meso-cultural influences on the responses to and use of email within the Welsh Further Education Sector. Cultural divisions have been drawn to separate Senior Management, Middle Management, Academic and Business Support types. The study was conducted via a large scale survey distributed to the Welsh Further Education Sector with a total of 1010 responses gathered. Distinctions between the different roles were identified in a number of areas. The findings demonstrated significant differences particularly between management and non-management roles and recognition of the influences of overload together with a desire to change behaviours. Support roles were most likely to be satisfied with current email usage and behaviours of others. These findings are significant as no other study has considered email usage and behaviour in this context

Keywords: email, communication, culture, roles

1. Introduction

The introduction of email to business has offered organisations the opportunity to enhance communication by speeding up the process and lowering the costs as well as reaching a wider audience and allowing users to be more flexible (Bengston 1980, Holliday 1999, Russell and Cohen 1997 and Yu and Yu 2001). Despite these benefits, Daft and Lengel (1986) viewed email as lacking the important cues that made effective communication possible. So called ‘cueless’ communication (Rutter and Stephenson 1979) leave the communication process open to misinterpretation and can cause a failure to correctly communicate key information.

The need to ensure accurate communication is even greater where there are complicating factors that could negatively influence the process. Different culture is one of the complicating factors that has a significant impact within organisations. Organisational cultures exist and comprise the expectations, practices, outlooks and corporate direction within organisations (Carlone and Taylor 1998, Hargie et al 2004).

The way in which email is used may lead to a breakdown in communication between cultures within organisations. Email is one of the prevalent methods of communication within organisations and has continued to grow at an exponential rate (DeKey 2010) despite the drawbacks to its usage. Expanding organisations, time pressures and requirements to cut costs may have led to email becoming the main method of communicating applied in a blanket fashion within large organisations.

This paper will look at the approach to email taken by different cultures within the further education sector in Wales. The existence of these cultures will be explained and the differences and similarities between the ways in which the cultures use email will be explored.

2. Communication and Culture

Within the organisation itself, different cultures may exist among groups of workers (Manley 2000, Ravasi and Schultz 2006) as the nature of their work dictates the elements of the overall culture that apply to them and their roles generate their own cultural aspects. Daniels (1997) considered that because cultures exist as a common reference point which dictates behaviour, smaller cultural cells or sub-cultures may form within an organisation where individuals share closer common reference points, than they do with other members of the organisation.

Communication has an important role both within a culture and when intercultural communication is taking place. Shome and Hedge (2002) explored the impact of culture and communication and noted that where intercultural communication is concerned, cultural cells tend to struggle to communicate with one another, leading to the breakdown of communication. This can be built on with the work of Hoogervorst et al (2004) who showed that different cultures within a single organisation may have a direct impact on communication.

Much of the work on intercultural communication such as that conducted by Lillis and Tian (2008), Mato (2008) and Shome and Hedge (2002) focuses on the communication difficulties experienced where organisations expand into different global markets. However, Silverstone (2012) argued that meso and micro cultures within organisations may experience the same communication difficulties. For example, Child (1981) and Barrett and Bass (1976) argued that the strength of the underlying symbols and values within a cultural system have an important impact on structures, choices and potential effectiveness. This may influence the relationship that one group has with communication media in ways that are different to the influences exerted on another group.

Therefore, when communicating interdepartmentally, although a degree of culture can be assumed, for example, in the form of some shared acronyms or systems, the cultural markers will be different and hence the same intercultural communication issues may apply as do in work exploring the influences of different global cultures.

At the least, breakdowns in communication caused by culture may cause difficulties but, at the worst, they may cause significant damage to relationships, morale and ultimately, productivity. When communicating across cultures it is essential to remember that it is not just the content that may differ but also the approach to communication. This may manifest itself in a tendency to use particular types of communication but also may show in different approaches to the use of the same communication method, in this case, email.

As a result of this, it is considered that within organisational meso cultures, despite what the macro culture may prescribe in terms of approaches to communication media, differences may exist that manifest in different uses of email. The different approaches to the use of email, rather than simply the language or content itself, may cause breakdowns in communication.

Based on these considerations the staff in the Welsh FE sector will be broken down into four groups along what is to be termed as mesocultural lines. Macrocultures are to be considered as the overall culture within an organisation (Silverstone 2012), mesocultures are equivalent to the key bureaucratic pillars represented by different roles within the organisation (Handy 1976). Microcultures within organisations represent the different cultures that exist within individual departments or informal working groups that make up the pillars of mesoculture.

Role culture defines cultural groups within an organisation along lines of described roles and processes that form the pillars which support the organisation (Handy 1976). The different roles will have different characteristics that will contribute to the overall function of the organisation. Handy (1976) also considers that due to different roles there will be different cultures operating within the organisation.

This paper considers four generic roles i.e. roles in which similar activities are carried out by a number of people e.g. Senior Management and Academic. It is recognised that sub-cultures/micro-cultures may also exist within these employment groups. It is hypothesised that different generic roles will have different relationships with the use of email which may influence the efficiency of communications between role types.

3. Method

The study was conducted within the Further Education Sector in Wales. The sector itself and the individual organisations that make it up were considered to be the macro-culture. This was decided as all institutions are members of Colegau Cymru which helps to standardise the practice of incorporated institutions.

Within each institution the meso-cultures selected for review were Senior Management, Middle Management, Business Support and Academics. The strata were decided upon as they form the main employment role distinctions within the sector. Using these employment roles, the barriers of individual institutions can be removed and these categories considered on a sector wide basis.

A survey was sent to all institutions within the sector over a 2 month period. A stratified random sample was requested based upon the meso-culture categories identified. A total of 1198 questionnaires were returned of which 1010 were identified as being complete. This return rate represents approximately 12% of the total sector workforce and included representation from all 17 Further Education Colleges and 2 designated Further Education institutions within the sector.

4. Results

Drawbacks and benefits related to the use of email were asked for through an open ended question. In each case 1010 responses were received. These were coded and the following themes emerged as most popular. In terms of drawbacks, excessive load, time wastage, blanket approach, lack of human interaction, failure to respond, reliance on systems, potential for misinterpretation and damage were the key themes identified. The benefits identified were speed, reliability, ease

and scope as well as record of messages and the asynchronous nature of the communication medium.

Sent and received message load along with perception of change are shown in figures 1 to 4 below. For analytical purposes the number of categories was collapsed to enable a valid chi square test to take place.

Figure 1, the perceived changes in sent message load by employment role

		[2] Please select the category that best represents your employment				Total
		Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)	
[8] How has the volume of sent messages changed in recent years?	Increased Count	40 88.9%	147 93.0%	248 79.7%	394 83.5%	829 84.1%
	Decreased Count	1 2.2%	2 1.3%	12 3.9%	12 2.5%	27 2.7%
	Stayed the same Count	4 8.9%	9 5.7%	51 16.4%	66 14.0%	130 13.2%
Total	Count	45 100.0%	158 100.0%	311 100.0%	472 100.0%	986 100.0%

Figure 2, the perceived changes in received message load by employment role

		[2] Please select the category that best represents your employment				Total
		Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)	
[10] How has the volume of received messages changed in recent years?	Stayed the same Count	3 7.0%	12 7.6%	42 13.3%	44 9.2%	101 10.2%
	Increased Count	40 93.0%	145 91.8%	265 84.1%	417 87.6%	867 87.4%
	Decreased Count	0 0.0%	1 .6%	8 2.5%	15 3.2%	24 2.4%
Total	Count	43 100.0%	158 100.0%	315 100.0%	476 100.0%	992 100.0%

Figure 3, number of messages sent per day by employment role.

		[2] Please select the category that best represents your employment				Total
		Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)	
[7] On average, how many emails do you send in a day?	0 - 10	1 2.2%	13 8.1%	102 32.0%	255 53.0%	371 36.9%
	11 - 20	7 15.2%	44 27.5%	93 29.2%	157 32.6%	301 29.9%
	21 - 30	12 26.1%	40 25.0%	70 21.9%	46 9.6%	168 16.7%
	31 - 40	14 30.4%	22 13.8%	31 9.7%	16 3.3%	83 8.3%
	41 - 50	8 17.4%	26 16.3%	14 4.4%	5 1.0%	53 5.3%
	51 - 60	2 4.3%	7 4.4%	5 1.6%	0 .0%	14 1.4%
	61 - 70	0 .0%	3 1.9%	2 .6%	0 .0%	5 .5%
	71 - 80	0 .0%	2 1.3%	1 .3%	1 .2%	4 .4%
	81 +	2 4.3%	3 1.9%	1 .3%	1 .2%	7 .7%
Total	Count	46 100.0%	160 100.0%	319 100.0%	481 100.0%	1006 100.0%

Figure 4, Number of messages received per day by employment role

		[2] Please select the category that best represents your employment				Total
		Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)	
[9] On average, how many emails do you receive in a day?	0 - 10	0 .0%	7 4.3%	57 17.9%	110 23.0%	174 17.3%
	11 - 20	2 4.4%	19 11.7%	98 30.7%	191 40.0%	310 30.9%
	21 - 30	3 6.7%	42 25.9%	79 24.8%	95 19.9%	219 21.8%
	31 - 40	9 20.0%	26 16.0%	38 11.9%	43 9.0%	116 11.6%
	41 - 50	10 22.2%	25 15.4%	23 7.2%	23 4.8%	81 8.1%
	51 - 60	6 13.3%	16 9.9%	8 2.5%	10 2.1%	40 4.0%
	61 - 70	6 13.3%	9 5.6%	7 2.2%	1 .2%	23 2.3%
	71 - 80	3 6.7%	9 5.6%	2 .6%	0 .0%	14 1.4%
	81 +	6 13.3%	9 5.6%	7 2.2%	5 1.0%	27 2.7%
	Total	Count	45 100.0%	162 100.0%	319 100.0%	478 100.0%

The average time spent for each of the employment roles was gathered using a sliding scale from 0 to 180 minutes. Senior management spent on average 90.02 minutes per day, middle management spent 100.12 minutes per day, Business Support spent 68.28 minutes per day and Academics spent 47.04 minutes per day.

The number of messages that users perceived were manageable to send and receive in a day was gathered using an open ended text box. Senior managers perceived that an average of 34.74 messages could be sent and 37.00 could be received. Middle managers perceived that an average of 25.29 messages could be sent and 27.70 could be received. Business Support perceived that an average of 23.25 messages could be sent and 23.65 could be received. Academics perceived that an average of 14.19 messages could be sent and 15.61 could be received.

Figure 5 below illustrates the proportions of staff who wished to change their email usage. This was followed up by an open ended question asking respondents to justify their answers. The key reasons reported were volume and content management and the desire to receive fewer unsolicited emails. For those who did not wish to change their usage, respondents generally believed that the current levels of usage are manageable but should not increase.

Figure 5, the desire to change email usage by employment role

	[2] Please select the category that best represents your employment					Total	
	Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)			
[13] Would you like to change your email usage?	Yes	Count	24	86	70	184	364
			53.3%	53.4%	22.0%	38.6%	36.4%
	No	Count	21	75	248	293	637
			46.7%	46.6%	78.0%	61.4%	63.6%
Total	Count		45	161	318	477	1001
			100.0%	100.0%	100.0%	100.0%	100.0%

Respondents were asked whether they consider others before sending emails. The results are shown in figure 6 below. Respondents were also asked to justify their responses. The main themes reported were that users tended to consider their own and others' time management and expectations as well as the appearances and interpretation of the messages they were sending.

Figure 6, consideration of others when sending emails by employment role

	[2] Please select the category that best represents your employment				Total
	Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)	
[14] In general, do you consider the impact on the recipient before sending emails?	Count	Count	Count	Count	Count
Yes	42 91.3%	141 87.6%	275 86.2%	400 83.2%	858 85.2%
No	4 8.7%	20 12.4%	44 13.8%	81 16.8%	149 14.8%
Total	Count	Count	Count	Count	Count
	46 100.0%	161 100.0%	319 100.0%	481 100.0%	1007 100.0%

Respondents were asked to report whether they waste any time when using email. The results of this can be seen in figure 7 below. Those who answered yes to this were then asked to provide an estimate of what proportion of time they spend using email is wasted. Senior managers reported an average of 19.59% wastage. Middle managers reported an average of 22.23% wastage. Business Support reported an average of 16.32% wastage. Academics reported an average of 18.53% wastage.

The main reasons for wasted time provided by respondents were the receipt of work related emails that are not relevant or duplicated. Additionally, personal management issues were cited as a significant cause. Respondents were also asked to identify behaviours from a list established through review of existing literature (figure 8 below.)

As well as identifying behaviours, users were asked to select the one that they thought was most important and provide an example. The most commonly reported related to irrelevant content or repeated messages. Poorly written messages and the desire to avoid face to face contact were also key issues reported. Bullying, inappropriate content and messages with an aggressive tone were also reported.

Figure 7, the perceptions of wasted time when using email by employment role

	[2] Please select the category that best represents your employment				Total
	Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)	
[17] Do you waste any time using email?	13 28.3%	49 30.4%	168 52.7%	176 36.9%	406 40.5%
Yes	33 71.7%	112 69.6%	151 47.3%	301 63.1%	597 59.5%
Total	46 100.0%	161 100.0%	319 100.0%	477 100.0%	1003 100.0%

Figure 8, wasteful behaviours by employment role

Response	Senior Management	Middle Management	Business Support	Academics
Inappropriate content	30.4%	29.6%	12.5%	13.7%
Aggressive tone	56.5%	53.7%	24.6%	29.1%
Bullying	10.9%	19.1%	4.0%	13.1%
Content you found offensive	13%	16%	6.5%	10.6%
Sent by the sender to avoid face to face contact	63%	71%	49.2%	52.6%
Poorly written	78.3%	81.5%	66.4%	68.2%
Hastily composed without due consideration	71.7%	76.5%	53.3%	57.8%
Content that is not relevant to you	78.3%	83.3%	76.6%	83.6%
Same message from multiple sources	69.6%	71.6%	48%	67.4%
None of the above	2.2%	1.2%	8.1%	6.4%

Figures 9 to 11 below illustrate the responses to questions about attendance at training. The questions focused on whether users had attended training in the past 12 months, the nature of the training, whether it was relevant and if not, why not. The information on why training was not relevant was gathered using an open ended question and the main themes were that the training was not relevant to the role undertaken, it was not required or it failed to achieve the stated aims.

Figure 9, the attendance at email training within the past 12 months by employment role

	[2] Please select the category that best represents your employment				Total
	Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)	
[22] Have you attended training on the use of email in the past 12 months?	4 8.9%	12 7.4%	51 15.9%	65 13.6%	132 13.1%
	41 91.1%	150 92.6%	269 84.1%	414 86.4%	874 86.9%
Total	45 100.0%	162 100.0%	320 100.0%	479 100.0%	1006 100.0%

Figure 10, whether the training attended was relevant to the respondents' role by employment role.

	[2] Please select the category that best represents your employment				Total
	Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)	
[22b] If you did attend training, was it appropriate for your role?	3 42.9%	12 34.3%	55 54.5%	63 48.8%	133 48.9%
	4 57.1%	23 65.7%	46 45.5%	66 51.2%	139 51.1%
Total	7 100.0%	35 100.0%	101 100.0%	129 100.0%	272 100.0%

Figure 11, the nature of the training undertaken by employment role.

		[2] Please select the category that best represents your employment				
		Senior Management (Academic and Business Support)	Middle Management (Academic and Business Support)	Business Support (please identify your role)	Academic (please identify your main discipline)	Total
[22] Have you attended training on the use of email in the past 12 months? [other]	Software or hardware training Content management training Accreditted course Other training	Count 3 100.0%	Count 6 60.0%	Count 35 79.5%	Count 36 76.6%	Count 80 76.9%
		Count 0 .0%	Count 2 20.0%	Count 3 6.8%	Count 3 6.4%	Count 8 7.7%
		Count 0 .0%	Count 2 20.0%	Count 2 4.5%	Count 3 6.4%	Count 7 6.7%
		Count 0 .0%	Count 0 .0%	Count 4 9.1%	Count 5 10.6%	Count 9 8.7%
Total	Count	Count 3 100.0%	Count 10 100.0%	Count 44 100.0%	Count 47 100.0%	Count 104 100.0%

5. Discussion

These results provide us with an insight into email user role profiles of the different employment roles. When considering the drawbacks and benefits to email it can be seen that whilst the percentages are not high, middle management and academics are much more likely to identify excessive load as a drawback to usage. This consideration links to the usage and perceived manageability of sent and received messages.

Senior and Middle Management are more likely to feel that loads have increased, a marker of email overload. Middle Managers send and received more messages than they feel is manageable, both significant contributors to overload. Significantly the difference is higher in received messages which lends weight to the assertions made by Ingham (2003) and Dabbish and Kraut (2006) that received message load is a key factor in email overload. A similar pattern is observed for academics where actual load exceeds the perceived maximum.

Senior management and Business Support view email as having the potential to create a lack of human contact within an organisation. Connolly (1995) suggested that at least 20% of all communication should be conducted face to face to avoid a reduction in human contact within organisations. Silverstone (2012) considered that enabling the development of relationships, potentially through the use of face to face communication may be used to enhance communication effectiveness. Therefore, if these categories of staff wish to increase human contact, with a view to improving relationships then perhaps damage has already been done.

Inappropriate use was uniformly viewed as a drawback to email usage. A number of different examples of inappropriate use were considered in this study. For example, they were identified as causes of wastage with duplicated or irrelevant work related messages being the chief example. Senior managers and academics were most likely to express this opinion. Robson and Tourish (2006) identified that senior managers were concerned about over loading and wastage caused by poor communication; the findings of this study appear to bear these out.

In terms of the key benefits, all staff identify that speed, reliability and ease are the key benefits of email communication, especially senior managers. Connolly (1996) suggested that senior managers, in a position where they can influence strategy, will tend towards the use of email for these and other reasons. Sillince et al (1998) showed that managing directors, owners and chairpersons, all senior management positions, had the greatest influence in the adoption and proliferation of email within their organisations. The reasons given for championing the adoption were the speed and cost benefits (Sillince et al 1998).

The implication of these considerations is that senior management, due to their strategic role, have driven the expansion of email usage based upon their belief of the cost effectiveness of the medium. What is also clear is that senior managers now appear to be bearing the brunt of overload issues as a result.

Significant minorities of staff other than senior managers view the permanence of email as a benefit. The fact that messages are recorded and can be stored can be used to protect individuals in cases of bullying or other inappropriate use such as in Collins (1986) and Seshadri and Cartenson (2007). Despite the condition that emails are recorded and can be used by management where necessary to monitor the activities of individuals being present in a number of email policies, senior managers do not view the record of messages as being a benefit. It may be that business undertaken at this level is politically sensitive which demands a less permanent method of communication (Kurtsburg et al 2006).

Significant differences can be observed when looking at sent and received message loads, Chi square tests demonstrate that there is a relationship between employment role and sent message load ($\chi^2 = 235.516$, $p=0.000$) and received message load ($\chi^2 = 237.404$, $p=0.000$).

Senior and Middle Management tend to send significantly fewer messages in the lower categories. This is indicative of a changing trend in management email usage, for examples, 56.7% of all management roles in this study sent fewer than 30 emails daily compared to 75% observed by Markus (1994). Similarly, looking at the higher sent load categories, 43.2% of managers sent more than 30 messages daily compared to 25% as observed by Flood (2001).

Senior and middle management send more messages overall and there are greater proportions of respondents in the middle and higher categories. This suggests that it is management who generate the load experienced in email systems.

Possible reasons for the difference in usage include the ability for email to improve communication by allowing managers to rapidly communicate with staff (Tassabehji and Vakola 2005), enabling relationships in areas of ever growing responsibility to be improved (Cunha and Cunha 2006). In addition to these, email enables managers to keep workers informed as necessary (Kitchen 1997), this is achieved by making use of email's ability to send a single message to multiple recipients (Stevens and McElhill 2000). In this study, respondents were not asked to distinguish between messages they sent to single or multiple recipients.

When considering received messages there is a difference once again between management and non management staff. Academic and Business Support tend to receive fewer emails and the number of respondents is concentrated in the lower response categories. Senior and Middle Management have fewer responses in the lower categories and the drop off is once again less rapid with higher proportions of management staff receiving higher numbers of messages.

It is not possible to ascertain from the data collected where messages are sent to and received from. This information may give insights into how load is generated between employment roles.

Received messages are the strongest indicator of email overload as considered by Ingham (2003) and Dabbish and Kraut (2006). In itself, a higher number of received messages is not necessarily enough to suggest overload. Sent and received messages taken in conjunction with the perceived maximum number of messages manageable to send and receive, as well as perceptions of change, can provide context against which to consider overload.

In terms of sent messages, Senior managers, Business Support and Academics report sending, on average, fewer than the average number of messages perceived to be manageable to send. Middle managers believe that they send more than the manageable number of messages which will contribute to overload. Anova tests show that Academics perceptions of sent message manageability differ significantly from all other staff ($p=0.000$ in all cases). Middle Management and Business Support do not differ significantly ($p=0.681$). Middle Managers and Senior Managers do differ but not as strongly as Academics and others ($p=0.012$). Business Support and Senior Management perceptions differ strongly ($p=0.001$).

All employment roles receive more than the average manageable messages. This is important as it suggests overload. The extent to which the figures are above manageable averages is different with senior managers receiving in the region of 14 more messages per day than they perceive to be manageable. This reduces to only 1 message more than is manageable for Business Support roles. Anova tests show that Academics' perceptions of received messages manageability differs significantly from all other employment roles ($p=0.000$ in all cases). Middle Management and Business Support do not differ significantly ($p=0.149$). Middle Managers and Senior Managers do differ but not strongly ($p=0.022$). Business Support and Senior Managers perceptions differ significantly ($p=0.000$).

These findings suggest that the extent to which email overload exists is affected by the culture within each generic role. However there are similarities between groups, notably between Business Support and Middle Management. Senior managers have driven the expansion of email services through their cultural receptiveness to the benefits it brings. As a result of this they have placed themselves in a situation where they are significantly more loaded than they believe to be manageable. This approach has also created overload for all other roles who have lower perceptions of manageability perhaps due to their lower investment in the benefits of the systems.

Perceptions of change help to bolster the findings of sent and received messages. All employment roles felt that sent load has increased in recent years, however, middle managers feel this more strongly than other roles. Whilst there are some differences in the percentages, Chi square tests illustrate that the perception of increased sent load is not dependant on employment role ($\chi^2=15.149$ $p=0.19$).

However, the descriptive observations tie in with middle managers being the only category of staff to send more messages than they feel are manageable. All staff also believed that received messages had increased in recent years. In this case, senior managers believed this most, tying in with receiving the highest number of messages over the perceived maximum to receive. Chi square also reveals that despite descriptive observations, employment type does not influence the perception that load had increased ($\chi^2=10.043$ $p=0.123$).

If the employment roles are ranked by both sent and received messages in relation to perceived maximum and these are then placed alongside rankings for perception of change the same pattern of rankings can be observed. As shown in figure 12 below, In terms of sent messages, middle managers are over their perceived maximum and have the greatest proportion of respondents believing that volume had increased. Business Support sent loads are further below the perceived maximum than the others, matching with the lowest perception of increase. The identical pattern can be seen when looking at received messages.

Figure 12, the relationship between differences in actual load and perceived manageability related to the perceptions of increase, results shown by role

	Mean Sent	Mean Manageable	Diff.	Rank	% increase	Rank
Senior Managers	33.79	34.74	-0.95	2	88.96%	2
Middle Managers	29.52	25.29	+4.23	1	93%	1
Business Support	19.25	23.25	-4	4	79.7%	4
Academic	12.70	14.19	-1.49	3	83.5%	3

	Mean Received	Mean Manageable	Diff.	Rank	% increase	Rank
Senior Managers	51.57	37.00	+14.57	1	93.0%	1
Middle Managers	39.20	27.70	+11.5	2	91.8%	2
Business Support	24.74	23.65	+1.09	4	84.1%	4
Academic	20.17	15.61	+4.56	3	87.6%	3

There is a clear relationship between the perceived maximum manageable for sent and received messages. For the whole sample group $r=0.736$ $n=848$ $p=0.000$. For Senior Managers $r=0.941$ $n=41$ $p=0.000$. For Middle Managers $r=0.798$ $n=139$ $p=0.000$. For Business Support $r=0.799$ $n=264$ $p=0.000$. For Academics $r=0.461$ $n=404$ $p=0.000$. This illustrates that all users feel that sent and received loads should balance. Senior managers believe this most strongly and academics believe this to a lesser degree.

The average time spent daily when using email differed between the employment roles used in this study ($p=0.000$). A one way ANOVA tests reveals significant differences between Senior Managers and Business Support ($P=0.000$) and significant differences between Senior Managers and Academics ($p=0.000$). There are no significant differences between senior managers and Middle Managers ($p=0.997$). Business Support and Academics differed significantly from the other roles ($p=0.000$)

The time spent using email does not necessarily relate to the sent and received messages observed. This can be illustrated by the average time taken per message by each role. Senior Managers spent 1.15 minutes per message, Middle Managers spent 1.46 minutes per message, Business Support spent 1.55 minutes per message and Academics spent 1.43 minutes per message.

It is not entirely clear why there should be a difference in the time spent per message. Kitchen (1997) suggested that managers use email to keep workers informed. If this is the case then messages may not be complex and therefore will not take much time to deal with. In addition, the results show that where users receive high levels of work related messages that are not relevant or are duplicated; they tend to spend less time per message. This may be that, whilst the messages are considered to be wasteful, they can be disposed of quickly.

The differences in time spent may also suggest other important factors for email users to consider. If Senior Managers spend less time per message then it is important to keep messages short and to the point in order to help ensure that communication is effective. Middle Managers spend more time per message. This may reflect the more complex, operational role and the messages that they receive. Business Support tend to spend the most time per message which may reflect the complex instructions that they are dealing with within their role. Business Support also has the closest averages of sent and received messages suggesting greater care being taken over instructions being passed.

The desire to change email usage also differs between the employment roles. Senior and middle managers are most likely to want to change their usage with Business Support least likely. Academics are more likely than Business Support to want to change but less likely than Senior or Middle Managers. The pattern matches that which is observed when looking at the difference between manageability versus actual messages, as well as perceptions of increase. This is illustrated in figure 13 below.

Figure 13, The relationship between the difference in actual and manageable loads and the desire to change, results shown by role

	Cumulative Difference (actual vs. manageable)	Rank	Desire to change (yes)	Rank
Senior Mangers	13.62	2	53.3	2
Middle Managers	15.73	1	53.4	1
Business Support	-2.91	4	22.0	4
Academic	3.07	3	38.6	3

This suggests that differences between actual messages sent and received, and perceived maximum manageable affects the desire to change. The findings suggest that the more the actual usage figures exceed the perceived level of maximum, the higher will be the percentage of users who wish to change their usage. This further suggests that roles who wish to change their email usage will have perceived maximums that are lower than their average usage.

Volume and content management was cited as the biggest reason for wishing to change email usage. This further bears out the consideration that actual versus perceived maximum load is related to the desire to change usage as well as the perception that usage has increased. The same pattern is also observed when looking at desire to reduce unsolicited communications. It appears that these also have a negative impact on email usage, increasing the desire to change. The receipt of unsolicited messages may also impact on incoming message loads.

Applying a filter to isolate the users who said that they wished to change their email usage showed an average sent message load of 21.2 against a perceived maximum of 17.37. An average received load of 32.9 messages against a perceived maximum of 19.1 was also observed. This further suggests that received message load has a significant impact on users' desire to change their email usage.

There is no difference in the proportions of each role who believe that they consider the needs of others before sending emails. In all cases the results are high suggesting that all employees understand the load that they are placing on others when they send messages. Denning (1982), Seeley and Hargreaves (2003), Ingham (2003) and Evans and Wright (2008) all discuss the issue of generating excessive load by not considering the needs of the recipient. It appears that this issue has been taken on board by the users of email in this case.

Further to the similarities in findings there are also very similar response rates for the reasons given. In all cases time management of self and others as well as appearances and interpretation of the message is the key reasons provided as to why others are considered.

Perceptions of wastage differ between the employment roles. Middle and Senior Managers perceive that they waste the most time. This may be related to the fact that these two groups send and receive the most email as well as spending the most time using email. There is a break in the pattern when looking at Academics and Business Support.

Whilst Business Support send and receive more messages, and spend more time using email than Academics, they are less likely to believe they waste time when using email. Academics have the lowest time spent and overall sent and received messages but 63.1% believe they waste time which is almost as high as Middle Management at 69.6%.

Academics identified strongly with the idea that work related emails that are not relevant or are duplicated are significant causes of email wastage. This role also identified most strongly with the idea that personal management issues cause wastage. Furthermore, the drawbacks most commonly identified by Academics were time wastage, the blanket approach to sending messages and excessive load.

Lou et al (1997) suggested that whilst the use of email is generally accepted by all staff there are differences based upon job roles. In the case of staff in an academic institution, Senior and Middle Managers as well as Business Support are generally desk based roles; where there is greater time to deal with emails. In these cases there may be a lower perception of wastage. An Academic role causes the member of staff to be out of an office and therefore away from email for extended periods. What time there is for email usage may see the user less tolerant of messages that are not relevant and therefore more likely to believe that time is wasted.

There does appear to be a relationship between the numbers of messages received, the desire to change email usage and the perception that time is wasted. If Academics are removed from consideration as the components of their role are significantly different to those of the other roles under consideration. Senior Management, Middle Management and Business Support have a number of similar components within their roles such as being primarily office based and therefore having greater time to manage their email.

Similar observations can be made of the proportion of time wasted. Senior and Middle Management report the highest proportion but Academics believe that a greater proportion of their time is wasted than Business Support. This may be related to the reduced amount of time that Academics have to manage email in comparison to other roles. As a result of this, if an Academic's time is wasted when using email, most likely through irrelevant work related messages, duplicated communication or blanket approach, it is likely to account for a higher percentage of their email usage time.

The reasons for wastage obtained up to this point were gathered through open ended questions which were then coded. Examples gathered from the literature were also employed to corroborate these findings. Senior and Middle Management were most likely to report receiving emails that contained either inappropriate or offensive content, having an aggressive tone or were bullying in nature. Lim and Teo (2009) suggested that managers tend to be the source of these uncivil behaviours rather than the recipients of them. Similarly Baruch (2004) reported that managers were a significant source of bullying but that peers were also sources.

Considering these findings it can be suggested that whilst senior managers are experiencing significant levels of uncivil email behaviour, some of the more serious issues may originate from their peers, in line with Baruch (2004). However, these findings need further testing.

Senior and Middle Managers were also most likely to report receiving messages that were sent to avoid face to face contact or were poorly written and hastily composed. Lack of human interaction was seen as a drawback by Senior and Middle Managers which fits with the perception of receiving messages to avoid face to face contact. Similarly, damaging messages and the potential for misunderstandings were also cited as significant drawbacks.

Academics most strongly identified that they had received messages that contained irrelevant content. This fits with the cited reasons for wastage that were discussed previously. When asked to provide an example of the most important issues there are differences to be noted. All employees strongly identified irrelevant content as the biggest inappropriate use of email.

There are slightly different attitudes towards email training. Senior and Middle Managers were much less likely to have attended training in the past 12 months. However, for all roles the proportion of users attending training is very low. There is very little difference in the opinions of those who attended training about the value of the training. However, a number of staff felt that training was not appropriate and a high proportion of Academics felt it was not relevant for their role or did not achieve the stated aims.

From the discussions undertaken it is possible to generate user profiles for the four roles discussed in this study. These profiles are shown below.

Senior Managers	Middle Managers
<p>Differences:</p> <ul style="list-style-type: none"> • Lack of human interaction viewed as a drawback • Views speed reliability and ease as a benefit compared to middle managers • Not interested in the record compared to all other roles • Receives significantly more than other roles • Time spent per message lower than other roles • Only role where mean manageable sent messages is less than mean actual sent <p>Similarities:</p> <ul style="list-style-type: none"> • Views speed reliability and ease as benefits along with business support and Academics • Sends similar loads to middle managers • Perceptions of increase similar to all other roles • Similar overall time spent to middle managers • Similar desire to change as middle managers • Perceive a similar proportion of time wasted as academics • Mean received exceeds mean manageable • Similar reports of receiving inappropriate content and aggressive messages as middle managers 	<p>Differences:</p> <ul style="list-style-type: none"> • Does not view lack of human interaction as a significant drawback • Does not view speed reliability and ease as a significant benefit • Receives fewer numbers of messages than senior managers • Higher desire to change loads than non-management roles. • Higher proportion of wasted time than other roles. • Most likely to feel bullied via email <p>Similarities:</p> <ul style="list-style-type: none"> • Similar view of wastage as Academics • Sends similar levels of messages to senior managers • Perceives increases in message load • Shows concern over how messages may be interpreted • Similar reports of receiving inappropriate content and aggressive messages as senior managers
Business Support	Academics
<p>Differences:</p> <ul style="list-style-type: none"> • Lowest levels of waste perceived • Concerned about computer literacy and reliance on systems • Loads well within perceived maximums • Least likely to wish to change email usage • Less likely to view irrelevant messages as a cause of waste compared to all other roles • Less likely to perceive bullying, aggressive messages or avoidance of face to face contact as issues compared to other roles. <p>Similarities:</p> <ul style="list-style-type: none"> • Views lack of human interaction as a drawback similarly to senior managers • Similar views of speed, reliability and ease as benefits as senior managers and academics • Perceives increases in load similarly to other roles. 	<p>Differences:</p> <ul style="list-style-type: none"> • More concerned about time wastage and failure to respond than other roles. • Sends and received the lowest levels of messages compared to other roles. • Disproportionate views of waste compared to load and time spent compared to other roles. • Lowest level of time spent compared to other roles. <p>Similarities:</p> <ul style="list-style-type: none"> • Similar views on speed, reliability and ease as senior managers and Business Support • Exhibits similar issues related to overload as management roles • Views work related messages that are not relevant as being the primary cause for waste similarly to senior managers • Similar levels of waste as senior managers

6. Conclusions

Differences between the ways the identified roles view and use email have been demonstrated. There are significant differences between usage statistics that have been shown to be related to employment role. Senior Managers appear to send and receive the most email, most likely to feel that loads have increased and also exhibit other signs of email overload in the form of sending many more messages than they feel are manageable to send.

Middle Managers are similarly overloaded and tended to spend the greatest amount of time using email. However, in terms of sent messages middle managers do not differ significantly from Senior Management and Business Support.

All employees other than Academics are most likely to be content with their current email load. They tend not to wish to change current loads and are least likely to believe that they waste time using email.

Academics do not follow the established trends. They have much lower sent and received message loads and also the lowest time spent using email. However, they perceive wastage similarly to both Senior and Middle Managers who send and receive much greater loads. This appears to be related to the perception of manageability which shows that, whilst overall loads are low for this employment role they exceed what is perceived to be manageable which may account for the high desire to change.

The patterns observed may be explained by the roles undertaken. Senior Managers, Middle Managers and Business Support tend to be office based and may therefore have greater capacity to deal with email. Academics are not predominantly office based which may explain why they perceive waste as issues related to repeated messages or irrelevant content which would impact more greatly on the time they spend using email.

However, the differences in email user profiles for the generic roles point to different structures, choices and potential effectiveness of the use of email in these roles. These can be identified as the cultural markers that influence communication within and beyond these groups resulting in differing perceptions about wastage, email load, manageability, computer literacy, system dependence and the nature of human interaction at the meso-cultural level.

References

- Barrett, G. Bass, B. 1976 Crosscultural issues in industrial and organisational psychology, in: Dunette, M (ed) *Handbook of industrial and organisational psychology* pp1639 – 1686, USA, Rand McNally
- Baruch, Y. 2005 Bullying on the net: adverse behavior on e-mail and its impact, *Information and Management*, 42, pp361 – 371
- Bengston, R. 1980 Business opportunities of electronic mail, *Columbus Laboratories*, USA
- Carlone, D. Taylor, B. 1998 Organisational communication and cultural studies: A review essay, *Communication Theory*, 8, 3, pp 337 – 367
- Child, J. 1981 Culture, contingency and capitalism in the cross national study of organisations in: Cummings, L. Straw (eds), *Research in Organisational Behaviour*, 3, pp 303 – 356
- Collins, H. 1986 Electronic Mail, *Facilities*, 4, 12, pp10 – 14
- Connolly, C. 1995 Communication: getting to the heart of the matter, *Management Development Review*, 9, 7, pp37 – 40

- Cunha, M. Cunha, J. 2006 Towards a Complexity Theory of Strategy, *Management Decision*, 44, 7, pp839 - 850
- Dabbish, L. Kraut, R. 2006 Email overload at work: an analysis of the factors associated with email strain, *CSCW*, November 04-08 pp431 – 440
- Daft, R. Lengel, R. 1986 Organisational information requirements: media richness and structural design, *Management Science*, 32, 5, pp554 – 571
- Daniels, T. Spiker, B. Papa, M. 1997 *Perspectives on organisational communication*, 4th edition, USA, McGraw Hill
- Dekay, S. 2010 Designing email messages for corporate readers: a case study of effective and ineffective rhetorical strategies at a fortune 100 company, In: Hemby, K. 2010 Focus on business practice, *Business Communication Quarterly*, 73, 1, pp106 – 126
- Evans, C. Wright, W. 2008 To all users: Copy all users. *Management Services*, 52(1), 24–27.
- Flood, G. 2001 Management email overkill is a corporate malady, *Computing*, 22, Feb pp49
- Handy, C. 1976 *Understanding Organizations*, UK, Oxford University Press
- Hargie, O. Dickson, D. Tourish, D. 2004 *Communication skills for effective management*, UK, Palgrave Macmillan
- Holliday, L. 1999 Challenging questions about e-mail for language learning, *ESL Magazine*, 2(2), pp 14–15.
- Hoogervorst, J. Van Der Flier, H. Koopman, P. 2004 Implicit communication in organisations, the impact of culture, structure and management practices on employee behaviour, *Journal of Managerial Psychology*, 19, 3, pp 288 – 311
- Ingham, J. 2003 E-mail overload in the UK workplace, *Aslib Proceedings*, 55, 3, pp166 – 180
- Kitchen, P. 1997 *Public relations, principle and practice*, 1st edition, UK, Thomson Business Press
- Kurtzburg, T. Belkin, L. Naquin, C. 2000 The effects of e-mail on attitudes towards performance feedback, *International Journal of organizational analysis*, 14, 1, pp4 – 21
- Lillis, P. Tian, R. 2008 Cross-cultural communication and emotional intelligence, inferences from case studies of gender diverse groups, *Marketing Intelligence and Planning*, 27, 3, pp428 – 438
- Lim, V. Teo, T. 2009 Mind you e-manners: impact of cyber incivility on employees' work attitude and behaviour, *Information & Management*, 46, pp419 - 425
- Lou, H. McClanahan, A. Holden, E. 1997 Mandatory use of electronic mail and user acceptance: a case study, *American Journal of Business*, 12, 2, pp57 – 62
- Manley, K. 2000 Organisational culture and consultant nurse outcomes: part 1 organisational culture, *Nursing Standard*, 14, pp34 – 38
- Markus, M. 1994 Electronic mail as the medium of managerial choice, *Organisational Science*, 5, 4, 502 - 527
- Mato, D. 2008 Transnational relations, culture, communication and social change, *Social Identities*, 14, 3, pp 415 – 435
- Ravasi, D., Schultz, M. 2006, Responding to organizational identity threats: exploring the role of organizational culture, *Academy of Management Journal*, Vol.49, No.3, pp. 433–458
- Robson, P. Tourish, D. 2005 Managing internal communication: an organisational case study, *Corporate Communications*, 10, 3, pp213 - 222
- Russell, A. Cohen, L. 1997 The reflective colleague in e-mail cyberspace: a means for improving university instruction, *Computers & Education*, 29(4), 137–145
- Rutter, D. Stephenson, G. (1979) The role of visual communications in social interactions, *Current Anthropology*, 20, 1, pp124 – 125
- Seeley, M. Hargreaves, C. 2003 *Managing in the email office*, UK, Butterworth-Heinemann
- Seshadri, S. Carstenson, L. 2007 The perils of e-mail communications in non-profits, *Non-Profit Management and Leadership*, 18 (1) pp77 – 99
- Shome, R. Hegde, R. 2000 Culture, communication, and the challenge of globalisation, *Critical Studies in Media Communication*, 19, 2, pp 172 – 189

- Sillince, J. Macdonald, S. Lefang, B. Frost, B. 1998 Email adoption, diffusion, use and impact within small firms, a survey of UK companies, *International Journal of Information Management*, 18, 4, pp23` - 242
- Silverstone, B. 2012 Developing a relationship centred communication framework for email selection and usage – a literature review, *World Journal of Social Sciences*, 2, 7, pp257 - 269
- Stevens, G. McElhill. J. 2000 A qualitative study and model of the use of e-mail in organisations, *Internet Research: Electronic Networking Applications and Policy*, 10, (4), pp271 – 283
- Tassabehji, R. Vakola, M. 2000 Business email: the killer impact, *Communications of the ACM*, 48, 11, pp64 - 70
- Yu, Fu-Yun. Yu, Hsin-Ju Jessy. 2001 Incorporating e-mail into the learning process: it's impact on student academic achievement and attitudes, *Computers & Education*, 38, pp117 – 126