Observations of Communication Patterns in the European Work-place

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Successful diffusion of communication technologies requires an understanding, to some extent, of the existing interaction patterns of their potential users and the likely impact of the introduction of these technologies. This paper focuses on a study seeking to identify cultural differences in communication patterns that might apply in an international context. In this study, Mature students from the UK underwent 3-month work assignments in organizations in France, Germany, the Netherlands and Italy during the Summer of 1997. During their placements the students were asked to complete questionnaires which sought their perceptions of the use of various communication technologies and methods, together with written, verbal and non-verbal differences of people in their work situations compared with their experiences in UK organizations. Salient features of the findings and conclusions derived therefrom have been presented.

1 Introduction

The successful introduction of information and communication technologies (ICT) is of growing concern to the global community. The Bangemann Group, a high-level European group on the “Information Society”, saw the promotion of tele-working as “the first priority for public action if Europe is to seize the opportunities of the emerging information society” 1. Equally, in the USA, presidential advisers identified the growth of superhighways as “the single most cost-effective step America could take to become more competitive in the world economy” 2.

The authors posit that successful diffusion of ICTs, whether on a global or organization-wide scale, requires an understanding, to some extent, of the existing interaction patterns of their potential users and the likely impact of the introduction of these technologies. To this end, they have been investigating the work patterns of middle and senior managers in UK organizations over the past eighteen months via a longitudinal diary study.

During the UK study over 4500 behavioural incidents were recorded including for each incident, the location, persons involved, purpose, format of information communicated, method of preparation and action together with the choice of technology used. Preliminary results of this work suggest that the work patterns of managers may not necessarily be influenced substantially by the adoption of technologies in isolation 3. It appears that managerial work patterns are probably determined by more complex factors that may be organizational, psychological or sociological in nature.

This paper focuses on a supplementary study initiated by the authors to attempt to identify cultural differences in communication patterns that might apply in an international context. The study was undertaken by participants in the Leonardo Project - a European initiative to foster international exchanges for foreign language learning in a work-place context.

Forty mature students from the UK underwent 3-month work assignments in organizations in France, Germany, Netherlands and Italy during the Summer of 1997. During their placements the students were asked to complete questionnaires designed using bi-polar scaled grids which sought their perceptions of the written, verbal and non-verbal differences of people in their work situations in comparison to their experiences in UK organizations. Attributes being monitored included content, style and frequency. Additionally the students were asked to record their perceptions of the relative use of various communication technologies and methods including meetings (regular and ad-hoc), email, fax, computers, Internet, telephones (including cellular), post, telex, messaging services and video-conferencing. The
results were analyzed using both descriptive statistics and multivariate analysis techniques.

2 Communication patterns

The UK study adopted the empirical research model of managerial work which develops theory based upon the recording of activities of managers at work \(^1\), contrasting with the ordered world of classical theorists \(^5,6,7\) who suggest that a theoretical model can be pre-defined into which all managerial activities can be readily categorized. Over the past 50 years a number of important studies in Europe and the USA have contributed to the empirical body of evidence \(^8,9,10,11\). The empirical model suggests that the work of managers is fragmented, varied and governed largely by events over which the manager has little control and by a dynamic network of inter-relationships with other people. The choice of media adopted to send messages in various directions within this dynamic network is particularly important \(^12\). Indeed, the pace of innovation and diffusion of ICTs which serve this network, particularly throughout the 1980s, has been remarkably rapid \(^13,14,15\).

Interestingly, the results of the recent UK study indicate that the locational patterns of managers appear not to have changed substantially over the past 30 years during a period of rapid technological progress. The evidence indicated very strong correlations in locational work patterns with Stewart's earlier study \(^16\). Equally, the use of the most prevalent communication technology, the telephone, during that period appears not to have changed significantly – the time spent on the telephone remaining at around 6-7 percent of overall work time. Further comparison of telephone usage with other studies of managers in medium to large organizations conducted during the 1970s and 1980s \(^17,18\) confirmed this pattern. It was, however, noted that in the later study \(^19\) whilst British managers' telephone time constituted 7 percent of the total work time, their German counterparts spent on average 11 percent of their time on the telephone.

The authors decided to pursue this difference by initiating a supplementary study to examine whether potentially important differences in communication patterns exist in an international context.

3 Research approach

Logistical constraints prevented the repetition of the diary study in other countries, and so an alternative method of cross-national comparison was sought. A study report on efforts to gather IT-relevant statistics in OECD countries \(^20\) recognized the particular problems of conducting cross-national comparative surveys since "national differences in response can be biased and linguistic differences due to translation can result in different emphasis being placed on the same question". The authors obviated this weakness by using UK subjects working in each country, but also recognized that this approach introduced alternative weaknesses. For instance, the responses of the participants would be influenced by their previous work experience in the UK, and the particular context of their overseas work placement, including the size of organization and industry sector. It was recognized that the varied roles of the participants would not allow direct mapping of the findings against the results of the UK study, but instead sought to identify common patterns of perceptions which might indicate possible cultural differences in communication patterns. Equally, there was no opportunity to introduce a control group based in the UK to measure the impact of movement from one environment to another, irrespective of the international dimension. To mitigate these weaknesses the research limited itself to addressing broad exploratory questions, attempting to identify if there was any evidence of strong perceptual trends towards particular differences. Indeed, perceptual trends that were sufficiently strong to cross sectoral and specific experiential boundaries, were of particular interest.

3.1 Culture

Business culture has been defined in a number of ways including "the state of commercial development in a country...embracing the beliefs, attitudes and values that underpin commercial activities and help to shape the behaviours of companies...companies, in their turn, develop their own individual 'corporate cultures' which, put simply, manifest 'the way we do things round here'\(^21\) or, alternatively, 'the behaviours, values and beliefs which have most influence on our working relationships with colleagues, bosses and subordinates and the outside world within the framework of the Culture Triangle of communication, leadership and organization\(^22\).

For the purpose of this study, it was important to identify those aspects that might be readily measured using a single research instrument since logistical constraints prohibited more in-depth study in a broad cross-national survey. The authors were, therefore, particularly interested in focusing on the achievement of a broad under-
standing of the perceived behavioural manifestations within the communication context. This perspective related directly to the more detailed investigative focus of the UK study.

3.2 The Countries

To some extent the countries were self-selected, being limited to those being visited by Leonardo participants. However, the researchers were keen to ensure that the countries within Western Europe were well-represented and that the Northern and Southern geographic sectors were included. The Mole Map positions European countries on relative cultural similarities and differences in organizational and leadership style. Note that the Netherlands is considered to be the most culturally similar to the UK based on the map criteria, suggesting that experience of working in a company there may be similar to the UK. These criteria represented two of the three elements in Mole’s Cultural Triangle - the researchers were interested in investigating the third apex, i.e. communication. France, Germany, the Netherlands and Italy were selected as comparative examples, the Netherlands due to its previously noted culturally similarity, Italy representing a Southern Catholic culture, Germany, representing a Northern Protestant ethic, and France due to its geographic proximity to the UK and potentially spanning Northern and Southern cultures. Eastern European countries were not represented in the study, and neither were some of the smaller countries.

A number of demographic differentiators were noted including relative size, language skills, attitudes towards European integration, and national infrastructure ratings. Table 1 lists the relative sizes of each country in order of magnitude.

Table 2 illustrates the percentage of people in each country who can take part in a conversation in another language.

Table 3 provides the results of a survey of attitudes towards implementation of a Common European economic and social policy, particularly with reference to employment, in terms of percentages of populations. Note that the survey was taken in 1988 prior to the unification of Germany.

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**Figure 1— The Mole Map (Source: Mole 1995)**

**Table 1 — Relative size**

<table>
<thead>
<tr>
<th>Country</th>
<th>Official GDP ($Billion)</th>
<th>Population (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>1846</td>
<td>81</td>
</tr>
<tr>
<td>France</td>
<td>1279</td>
<td>57</td>
</tr>
<tr>
<td>Italy</td>
<td>1187</td>
<td>55</td>
</tr>
<tr>
<td>UK</td>
<td>1025</td>
<td>58</td>
</tr>
<tr>
<td>Netherlands</td>
<td>312</td>
<td>15</td>
</tr>
</tbody>
</table>

*Source: Mole 1995*

**Table 2 — Language skills**

<table>
<thead>
<tr>
<th>Language</th>
<th>France</th>
<th>Germany</th>
<th>Italy</th>
<th>Netherlands</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td>100</td>
<td>9</td>
<td>17</td>
<td>90</td>
<td>21</td>
</tr>
<tr>
<td>German</td>
<td>8</td>
<td>99</td>
<td>3</td>
<td>60</td>
<td>8</td>
</tr>
<tr>
<td>Italian</td>
<td>4</td>
<td>1</td>
<td>100</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dutch</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>English</td>
<td>30</td>
<td>35</td>
<td>19</td>
<td>72</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Eurobarometer 1994*
Table 3 — Attitudes to Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>For</th>
<th>Against</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>92</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>France</td>
<td>85</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Netherlands</td>
<td>78</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>West Germany</td>
<td>77</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>UK</td>
<td>70</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>

*Source: Eurobarometer 1988*

Table 4 — Infrastructure scores

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of highest scores</th>
<th>No. of lowest scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Belgium</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Great Britain</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Germany</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>France</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

*Source: Gibbs 1992*

In a survey by a leading firm of management accountants, the four European Countries geographically nearest to the UK were compared on a range of criteria including location (air and road transport rankings), internationalism, efficiency (resource costs - labour, building, telecommunications, etc.) and reliability (political stability, labour stability, etc.). A table of infrastructure scores was determined and these are presented as in Table 4.

To summarize, it appears that a reasonable spread of populations have been included for the medium to large western European countries with Germany being substantially larger than the UK, and the Netherlands being substantially smaller. The Netherlands is more competent in foreign language skills than the other countries represented and it also has the best national infrastructure rating. Italy and France appear to engender the most "pro-European" attitudes within their populations.

Given these demographic differences, the authors were keen to understand whether the experiences of the Leonardo participants led to perceived differences in the observed communication patterns of the work-force in each country.

3.3 Instrument

The research instrument was a questionnaire containing a series of bi-polar scaled grids which were geared towards addressing the following broad questions:

1. Is there a perceived difference in the written communication patterns in other European countries compared with the UK work-place?
2. Is there a perceived difference in the verbal communication patterns in other European countries compared with the UK work-place?
3. Is there a perceived difference in the body language used in other European countries compared with the UK work-place?
4. Is there a perceived difference in the use of communication technologies and methods used in other European countries compared with the UK work-place?

The measured factors were a series of 29 dimensions arbitrarily selected by the researchers which they believed represented potential "cultural" differences, and were readily quantifiable by simple observation. Whilst this approach was somewhat prescriptive, based upon normative views of what might be relevant dimensions, it was considered appropriate given the logistics of con-
ducting cross-national surveys, and the overall question of attempting to identify perceived differences that were sufficiently strong to merit further study.

The questionnaires were self-administered, simply structured and confidential. The limitations of the grid approach were recognized, including the inability to capture the underlying reasoning for the selected score, and the differing levels of observation and experience which may underpin each score. The grid technique was selected due to its simplicity of use and the ability to efficiently capture and analyze relative perceptions without in-depth explanation. The questionnaires were issued with a briefing document explaining the process for completion. Participants were mature students who had some previous experience of working in UK organizations. They were asked to complete the questionnaire during their 3 months work-placement in the overseas host organization, after a suitable period of observing the interaction processes which took place.

The questionnaire was divided into four sections, each containing a series of questions regarding dimensions of written communication, verbal communication, body language, and the use of communication technologies and methods. Participants were asked to scale their responses from 1 to 5 indicating whether a particular dimension appeared to be more or less prevalent in the UK than in their host country. Each question sought their relative perceptions of each dimension rather than an absolute measurement. Information was also requested on the type of organization (public/private), office layout (open plan/closed office), and number of employees.

3.4 Analysis

The questionnaire responses were initially fed into a relational database to enable flexible query generation. Queries containing sub-sets of results were extracted and analyzed using a combination of descriptive statistics and multivariate analysis techniques.

Prior to analysis the data were examined and cleaned. Thirty-one completed questionnaires were analyzed; 67 percent of these questionnaires were fully completed, with the remainder having one or more scores missing. The cleaning process involved transforming missing items with neutral scores. It was recognized that whilst a neutral score may not truly reflect the views of the participant, such a score would enable their remaining responses to be considered, and whilst it might influence the patterns of perceived similarity it would not unduly influence the determination of strong perceptual differences.

3.4.1 Population

Due to the relatively small sample, it was not considered appropriate to attempt to identify particular trends by country, but rather to establish if differences may exist between the UK and other European countries in general, thereby providing evidence or otherwise of the need to consider a differing cultural dimension of ICT diffusion within a pan-European context. In so doing, it was recognized that the responses may contain counter-acting trends in two or more countries which could create a false overall result. This was firstly addressed by asking the question “do the samples from each country represent the same population?” and building a suitable statistical model to test the data accordingly. A reference set of data from one country (the Netherlands) was compared with the remainder of the data (rest of Europe) by determining “observed” mean differences for each factor. Hundred random samples were then mechanically selected from all the data with members being randomly allocated to the reference set. For each sampling iteration the mean of the random reference set was compared with the mean of the remainder of the data for each factor, and a distribution of mean differences was computed. These sampling distributions were plotted against normal curves and the “observed” mean differences for each factor were tested for significance. For 25 of the 29 factors the null hypothesis that “the national samples do not represent the same population” was rejected. The process was repeated for a different and larger reference set (France), and in that instance 27 of the 29 factors produced no significant differences. The researchers, therefore, concluded that the national samples appeared to adequately represent the same population with regard to the research questions being studied, i.e. UK observers working in “another European country”.

3.4.2 Patterns

For each questionnaire section a distribution of perceptual scores was plotted by categorizing responses into “less than UK”, “same as UK” and “more than UK”. A chi-squared goodness of fit test was performed for each factor, by neutralizing the “same as” category, and performing a shape comparison against an “expected” distribution where “more than UK” and “less than UK” were equal. The observed results were tested for significance at 95% confidence level with 1 degree
of freedom. A correlation analysis was also conducted to establish potential relationships between the measured factors using Pearson's classical correlation matrix.

To further understand the impact of national patterns, and to possibly explain the small number of factors contained in the data that appeared to be nationally-dependent, multivariate country analyses were performed to attempt to identify if counter-acting patterns existed in the data. The sample data for any particular country was used purely for this pattern-identification purpose, since the sample was considered to be too small to form any statistically safe national generalizations in isolation. In particular, the data from each section was analyzed using agglomerative hierarchical clustering based on Ward's agglomerative linkage strategy, to establish if any national trends existed in the responses which could distort the pan-European perspective. The "best" number of groups was allowed to be automatically determined by the clustering algorithm producing dendograms. The dendogram provides a tree-structured plot of relationships between observations. In each instance the observers were grouped based upon their combination of multiple observations. Each observer was referenced by country appended with their unique reference number, e.g. Italy-24. The groupings were then associated with the original data which was sorted and filtered to enable subsequent interpretation of each group by the researchers. The interpretations were then appended to the dendogram plots.

Initially, the researchers hoped to also investigate potential pattern differences based on organization type and office layout. However, the quality of responses to the organization information (organization type, office layout, number of employees) were not sufficiently complete to allow analysis based on these criteria.

4 Findings

The findings of the study are logically grouped in accordance with the questionnaire sections, with the exception of the technology use section which was further partitioned into meetings, desk-work, telecommunications and computer communications for ease of presentation. For each section a distribution of perceptual scores was plotted, together with a dendogram illustrating national clustering patterns in the data.

4.1 Written Communication

Participants scored their perceptions of written communication based on verbosity of content of written items, number of items, formality of style, and aggressiveness of tone.

Figure 2a illustrates the distribution of perception scores for each dimension. The chi-squared test indicated no significant differences between the observed and expected shapes for each factor, essentially suggesting that there appears to be little evidence of perceptual differences in written communication processes based on these dimensions. In each instance the largest set of participants considered the patterns to be similar to the UK, with the exception of formality of style where the responses were somewhat spread across the spectrum of possible responses, indicating a diversity of views. A moderate positive correlation between written tone and verbal tone was found to exist. No other significant relationships with other measured factors were evident.

Potential patterns in national data which might have influenced these results are illustrated in the dendogram presented in Figure 2b. This plot re-inforces the view that strong trends were not evident for any particular country, with national results reasonably spread across the groups.

4.2 Verbal Communication

Participants scored verbal communication differences based on verbosity of content, speed of delivery, formality of style, aggressiveness of tone, and willingness to listen. Figure 3 illustrates the findings.

The responses tended to be generally skewed towards the "more" pole. The chi-squared test indicated that verbosity of content, speed of delivery and aggressiveness of tone were significant. Particularly, 55 percent identified greater verbosity, whilst 87 percent considered the verbosity to be the same or greater than the UK. Fifty eight percent of responses indicated a faster verbal speed than in the UK, whilst only 6 percent identified a lower verbal speed. Forty five percent considered the verbal tone to be more aggressive. Formality of style and willingness to listen were spread across the spectrum of possible responses indicating a diversity of views. Moderate positive correlations existed between verbosity and use of mobile phone, between formality of style and verbal tone, and between formality of style and use of telex. The dendogram plot failed to identify any specific national patterns in the responses.

4.3 Body Language

The researchers were interested in understanding the extent to which body language was used during interac-
Figure 2a — Perceptions of written communication differences

Figure 2b — Written communication: National patterns
Participants were asked to score the relative differences in levels of eye contact, facial expressions, gestures, handshaking and personal space that they perceived.

Figure 4a illustrates the distribution of perceptual scores. The chi-squared test indicated significant differences at 95 percent confidence level on all factors except eye contact. For three of the factors - facial expression, gestures and handshaking - the significance held at the 99 percent level. Moderate correlations were identified between eye contact and gestures, between facial expressions and gestures, between eye contact and personal space, between facial expressions and personal space, and between gestures and personal space. It is interesting to note that the strongest correlations were solely within the realm of body language rather than with other measured dimensions.

Figure 4b provides a dendogram of groups within the data. Three groups emerged, each containing a cross-section of national members, Group 1 essentially representing views of "more", group 3 representing views of "less", and group 2 being a transitional space between them. Due to the underlying multivariate nature of the dendogram, it is not usually possible to establish a simple two-dimensional view, but it is important to note that adjacency is an important factor in interpreting the plot.
In this particular instance, the data patterns were sufficiently strong to illustrate those who observed a difference in body language together with the overall direction of that difference.

These findings appear to suggest that body language might be an important cultural differentiator in communication processes. Indeed, the positive correlations between a number of the measured dimensions in this section, might suggest that a composite view of interactions could indicate that a substantial element of the process is contained in this aspect of communication. It may be pertinent to consider how much of the "message" is lost using technologies which do not convey body language, and to what extent this influences the choice to adopt such supporting technologies in societies where the use of body language is more overtly recognized. Indeed, some social psychologists suggest that communication is only 20 percent verbal, with the remainder of the message being contained in intonation and body language 22. Gibbs 24 suggest that "within Europe, while there are a number of particular variations or national characteristics of body language, there are many common gestures or expressions" and that "variations are most extreme in Northern Europe compared with the Mediterranean area". Interestingly, Gibbs' observations relate to the types of body language used rather than the extent to which it is used, which was a primary outcome of the authors' study.

4.4 Meetings

Figure 5 illustrates the perceptual difference in the number of ad-hoc discussions and meetings which took place.

Essentially, there was no difference identified for either of these elements, and the associated dendogram illustrate that this overall view is not distorted by national patterns.

4.5 Desk Work

The desk work that was measured included the use of computers, the amount of internal post and the amount of external post. Figure 6a illustrates the distribution of perceptual scores for each of these factors. The graph and associated chi-squared test illustrate that a significant difference applied in relation to the amount of internal post with some 39 percent of respondents identifi-
4.6 Communication Technology Use

Participants were asked to score the relative differences in the use of particular communication technologies and methods. To avoid bias, these were presented in alphabetical order, similar to the dimensions in the other sections. They included bleepers/pagers, computers (non-email), external email, internal email, fax, internet (non-email), mobile phone, telephone, telex, video-conference and voicemail. For analytical purposes the items were grouped into telecommunications and computer communications, essentially for ease of presentation.
Figure 7 illustrates the distribution of perception scores related to the use of telecommunications technologies. For the purpose of this analysis these were deemed to be bleepers/pagers, fax, mobile phones, telephones, telex and voice-mail/messaging services.

The chi-squared test revealed significant differences in the use of all technologies except fax. Particularly, some 52 percent thought that bleepers/pagers were less prevalent, and a similar number perceived mobile phones and voice-mail/messaging services to be used less; 39 percent considered that the telephone was used more than in the UK, whilst 45 percent thought that telex was used less. The dendogram revealed no significant national groupings.

Figure 8 illustrates the distribution of perceptual scores for those technologies deemed, for the purpose of this study, to be “computer communications”. These were email, both internal and externally accessible, use of the Internet for purposes other than email, and use of video-conferencing. It was recognized that video-conference facilities appear in various forms including personal conferencing by computer, and studio-based services. It was also recognized that these facilities are reasonably new, and did not figure largely in the UK study. However, it was considered pertinent to include emerging technologies in the study, together with an ageing technology (telex), but to also recognize that perception of usage might be substantially influenced by availability in these instances.
The chi-squared test indicated significant differences in the use of email and video-conferencing. The use of the Internet was not perceived as significantly different to that in the UK; 58 percent of respondents considered that internal email was used less than in the UK, and 52 percent thought that external email was used less; 42 percent considered that video-conferencing was used less than in the UK. Since these are all relatively emerging technologies, the researchers suspect that these results probably reflect, to some extent, the availability of these technologies rather than their specific usage. Information was not collected on availability of particular technologies due to logistical constraints.

Whilst the dangers of speculating on possible reasons for these results are clearly understood, the availability view is somewhat supported by strong positive correlations between use of the Internet, use of external email, and use of internal email. That is, if the technologies were not available this would be reflected by consistent low usage perceptions in the scores. Once again, the dendrogram did not reveal any nationally-dependent trends in the data.

5 Conclusions

There appears to be little evidence that written communication patterns are perceived as sufficiently different to influence the potential diffusion processes of supporting technologies in a pan-European context. However, particular aspects of verbal communication, including verbosity, speed of delivery and tone, together with body language may be important differentiators in communication processes. This raises supplementary questions about how these differences might be accommodated by supporting technologies. For example, in societies where more use of body language is made in interaction processes, would there be a tendency to favour technologies which enable these potentially vital signs to be conveyed? What might these technologies be? In the absence of such suitable technologies, are people more likely to seek alternative methods of communication, e.g. more face-to-face meetings, rather than use other type of technologies?

When considering work patterns such as meetings, ad-hoc discussions, computer-work and paper-work, there were no significant differences identified, with the exception of the use of internal post which was perceived to be less than in the UK. It was interesting to note, however, that there were no strong correlations between internal post and the other measured factors, which might have potentially explained this difference.

Use of telecommunications facilities was perceived to be generally less than the UK, with over half of the respondents perceiving less usage of bleepers/pagers, mobile phones and voice-mail/messaging services. Interestingly, the use of the telephone, which remains the most prevalent technology, was perceived to be more than in the UK. Thirtynine percent of respondents identified more telephone usage compared with only 6 percent who identified less. This finding concurs with Lawrence's study 19 which found that German managers spent on average almost twice as much of their time on the telephone than their UK counterparts.
5.1 Further Work

The study appears to suggest that body language and verbal communication techniques are an important aspect of human interaction processes that are differentiators in an international context. The authors posit that, for the successful diffusion of communication technologies in the global marketplace, these issues need to be recognized in the design of technologies that support the communication task. Further studies are required combining the disciplines of experimental psychologists, ergonomists and technologists to ensure that emerging communication technologies recognize and support these traits.

The perceived differences in use of telecommunications and computer communication technologies warrant further study, particularly in relation to availability of these technologies and local factors associated with their diffusion, such as cost and national infrastructures. The authors suggest that a clear understanding of such differences is important in the successful design of suitable information transfer processes and the diffusion of appropriate support technologies.

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