

Communication media selection in buyer-supplier relationships

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Abstract

Purpose: In successful purchasing relationships, effective communication is a key factor. The purpose of this paper is to explore if the choice of communication media is affected by different stages in the relationship development process and by different purchasing contexts: product and service purchasing.

Design/methodology/approach: The study initially reviews the literature on inter-organizational communication and purchasing relationships. In order to explore the research question, data was gathered through semi-structured in-depth interviews with purchasing managers, buyers and their suppliers in three product and three service purchasing relationships

Findings: The study identifies a relationship development framework that influences the communication media selection in two purchasing contexts. It confirms that communication media selection is affected by the communication needs of the participants, the stage of relationship development, and the purchasing context.

Research limitations/implications: This research was limited to six buyer/supplier relationships involving a single multinational buyer organization, so although a range of purchasing contexts was considered the findings have limited application. The relationship development process and the incidence of media selection should be further examined in varied contexts and a survey of buyers and suppliers should test the framework.

Originality/value: This study is a refinement on the existing predominantly single-respondent, survey-based studies in the literature in that both parties in a series of purchasing dyads were interviewed. The paper makes a contribution as it illustrates the application of the media richness theory, explores the contextual factors surrounding media selection and provides a buyer-supplier relationship development framework based on behavioural and functional aspects of the relationship.

Keywords: Buyer-supplier relationships, purchasing, communication, product, services.

Introduction

Purchasing relationships lie at the heart of interorganisational exchange markets and are a major focus of research in the fields of supply chain management and marketing (Dwyer, et al., 1987). Numerous studies of buyer-supplier relationships have identified communication as an antecedent of trust (Doney and Canon, 1997; Morgan and Hunt, 1994) and of relationship success and satisfaction (Monczka et al., 1995; Mohr and Spekman, 1994). Relational competencies such as communication are also key elements of strategic outsourcing (Holcomb and Hitt, 2007). However, with the advent of internet technologies, the range of communication channels available has greatly increased. Existing theory on communication in purchasing relationships has emerged from survey data that explained how frequently buyers and suppliers communicate and what media are used (Rice and Shook, 1990; Carr and Kaynak, 2007). The theory, however, did not explain what motivates choice. Furthermore, these studies do not distinguish between different contexts or different stages in relationship development and the media choices involved; therefore, they do not provide insight into the decision processes involved. This research proposes an exploratory research methodology in order to understand the dynamics of motivation in different contexts, and at different stages of relationship development.

The research questions emerging from the gaps in the literature are:

1. What is the effect of relationship development on the process of media choice?
2. What motivates the choice of communication media in product and service purchasing contexts?

Literature Review

Buyer-supplier relationships have gained considerable attention in recent years, as research in purchasing and supply management focuses increasingly on strategic aspects such as supply chain relationships. Interest comes from a variety of sources, including the industrial marketing and purchasing group (IMP), relationship marketing, organizational behaviour, and transaction cost economics (TCE) (Mol and Wynstra, 2003; Ford, and Hakansson, 2006). A number of studies reviewed models of business-to-business relationships from differing fields of literature (Wilson and Kristan Moeller, 1991; Naude and Buttle, 2000). These authors identify a number of dimensions that are generally considered as key to a relationship – communication, trust, satisfaction, commitment, relationship maturity, power and dependence. While relationship models and corresponding measurement instruments have been developed independently in a variety of domains, there is much divergence over the relative importance of the different models. Most of the empirical work to date has focussed on only one or two dimensions of the relationship, as an indicator of overall relationship strength (Giannakis and Croom, 2003).

Communication lies at the heart of any analysis of organizational relationships, as it is a critical component of the function of organizations and supply chains (Burgess et al., 2006; Zhou and Benton, 2007). Information is gathered from both inside and outside the organization, which then must be processed (Daft and Lengel, 1984). The requirement to communicate is driven by two forces: the need to reduce uncertainty, where there is an absence of information that would produce certainty; and the need to resolve equivocality where information is known but ambiguous and open to interpretation (Daft and Lengel, 1986).

Communication can be defined as "the formal as well as informal sharing of meaningful and timely information between firms" (Anderson and Narus, 1990, p. 44). Frequent and timely communication is important because it assists in resolving disputes

and aligning perceptions and expectations (Morgan and Hunt, 1994). Effective communication is therefore essential for successful collaboration (Monczka et al., 1995).

Mohr and Nevin (1990) argued that empirical research on communication in relationships is sparse. More recently there has been increased interest in communication, particularly the use of information technology in relationships (e.g. Leek et al., 2003; Jap and Mohr, 2002). This body of work is primarily survey-based, and treats communication as a simple construct which is frequently taken as constant within a relationship. In general, survey designs have limitations in studying such a complex concept, particularly when measuring socially constructed dimensions such as media symbolism (Trevino et al., 2000). Some authors measure communication with a single variable encompassing communication frequency, effectiveness and quality (Chen and Paulraj, 2004; Jonsson and Zineldin, 2003). Others adopt two separate measures for information sharing and information quality (Li et al., 2005; Claycomb and Franwick, 2005). Selection of communication media is usually distilled down to a categorisation of 'traditional' versus 'advanced' technologies (Carr and Kaynak, 2007). The quantitative research focuses on communication as a predictor of relationship success, but does not examine the process of media choice. Where qualitative studies have been done, the focus tends to be on the adoption of specific new technologies rather than media choice per se (e.g. Johnson, et al., 2007).

Accordingly, in order to explore the complexity of communication within relationships we draw on contributions from *media richness theory* and combine these with existing models which explain *relationship stages*.

Media Richness Theory

There has been considerable attention paid to the concept of media richness in the field of organizational communication (Ferry et al., 2001). Media richness is defined as the potential for information media to transfer knowledge between parties to reduce ambiguity (Daft and Lengel, 1984). Richness is enhanced by the range of senses involved in the communication and the variety and complexity of languages used. Whereas a set of numbers on a printed page conveys an understanding of specific data, the same numbers read out accompanied by variations in tone of voice and facial expression, could convey a different understanding.

An associated concept is the directionality of the communication, meaning whether it is in one direction only or bi-directional. This is relevant both in horizontal communication between peers and vertically within a hierarchy. In supply chains, the critical communication is predominantly horizontal, and an important question is whether it is one-way or bi-directional (Mohr and Nevin, 1990). Where information is bi-directional, this enhances the richness, as indicated in Table I below. They also identify the modality or medium of the communication, which can be operationalised as the personal, commercial or formal nature of the communication.

The media available for communication within and between organizations is constantly changing as information technology develops. Daft and Lengel (1984) propose a media richness scale, which ranks media according to the communication characteristics. They identify five media – face-to-face; telephone; written personal (letters, memos); written formal (bulletins, documents); and numeric formal (computer output). The characteristics of the medium chosen determine the nature of the communication, based on a combination of senses used, language and feedback mechanisms (Barry and Fulmer, 2004). In Table I below, the relationships between richness, language and senses is shown.

Take in Table I

The original scale has been expanded to encompass more recent technologies such as EDI and the internet. While these technologies provide almost instant feedback, they are considered 'lean' rather than rich, as they are still predominantly written and numerical representations of data (Stephens, 2007).

According to the media richness theory, managers will use communication channels with the appropriate level of richness for the particular purpose. At the most abstracted level, the function of the communication activity is to reduce uncertainty and/or clarify ambiguity. Clarifying ambiguity requires the ability to communicate complex phenomena, to easily combine multiple perspectives, and to quickly establish understanding and learning between parties. This will require media that enable instant feedback to allow interaction between communicator and receiver to establish understanding. On the other hand, uncertainty reduction is required when data is lacking, and the challenge can be met by gathering quantities of data. In this less ambiguous environment, communication can be managed using less rich media (Donabedian, 2006).

Relationship Stages

Within the purchasing function, communication between buyers and suppliers takes place during the execution of contracts for the supply of goods and services. Dwyer et al. (1987) identify five phases in a supply chain relationship: awareness, where potential partners are identified in the market; exploration, where the partners interact and initial transactions take place; expansion, where the extent of interdependence increases, and there is increased risk-taking; commitment, where the relationship is considered durable and both parties invest in maintaining the relationship; and dissolution, where parties withdraw and disengage. The authors propose that during each of these phases (except the ultimate dissolution phase), interaction takes place between the buyer and supplier that strengthens the relationship. As the phases progress, the level of information sharing and the quality of the communication increases resulting in higher interaction costs (Claycomb and Frankwick, 2005).

While Dwyer's five phases consider the lifecycle of the relationship, other authors have considered relationships from a more functional perspective and used different units of analysis. Specifically within purchasing relationships, Subramaniam and Shaw (2002) identify four categories: search, where the buyer attempts to locate a suitable supplier or suppliers of a product or service; processing of the order, typically specification, order processing, delivery and payment; monitoring and control which includes negotiation of the initial contract and ongoing progress monitoring; and coordination which includes problem resolution and expediting. They state that the nature of the communication, and the media chosen, will differ for each functional category. Accordingly, we draw on both of these models to analyse our data.

Product v. Service Contexts

The differences between product and service environments could also influence the role and impact of media richness. Vickery et al. (2004) argue that this is particularly so in business-to-business (B2B) relationships. Services differ from products because they are intangible, simultaneous and heterogeneous in nature. Intangibility implies that services cannot be touched, tasted or seen (Desmet et al., 2003). Intuitively it would seem that increased media richness could address these aspects of intangibility. Simultaneity means

that both buyer and supplier are intertwined in the co-production of the service. Co-production of a B2B service impacts on media choice in that there may be considerable ambiguity in initial service design and greater need for richer forms of communication. Heterogeneity means that buyers, suppliers and the episode(s) of interaction are all sources of variation in service delivery processes. Reducing or removing this variation is a challenging task for management through better planning of the service encounter and customer contact. Customer contact is an important dimension in virtually all service taxonomies. Essentially customer contact is the interface between the customer (buyer) and service provider (supplier) (Soteriou and Chase, 1998). Kellog and Chase (1995) identified communication time, intimacy and information richness as the three key dimensions of customer contact. Likewise, Vickery et al. (2004) found that media richness can affect firm performance when businesses interact in complex, uncertain B2B service environments. Accordingly it is appropriate to examine what motivates the specific choice of communication media in production and service purchasing contexts

Summary

The review of the literature suggests that media choice will vary during the course of the relationship, as the communication needs of the participants change. In addition, the differing contexts relating to the purchasing of products and services will impact upon media selection. Accordingly we put forward the following research questions:

1. What is the effect of relationship development on the process of media choice?
2. What motivates the choice of communication media in product and service purchasing contexts?

Methodology

Sources have argued that it is necessary to analyse communication media choices at the task level, as it is at this level that the motivation behind specific choices can be identified (Webster and Trevino, 1995). However, much of the existing research on communication in purchasing relationships has surveyed participants to establish how frequently buyers and suppliers communicate, and what media are used rather than what motivates choice (Rice and Shook, 1990; Carr and Kaynak, 2007). Unfortunately, these studies do not tend to distinguish between individual communication events and the media choices involved and do not provide any insight into the decision processes involved. This research proposes an exploratory research methodology in order to understand the dynamics of motivation at the task level. Previous research has also ignored how communication media selection changes over different relationship development phases. This research explores the communication media choices over the development of several relationships across two different purchasing contexts: products and services.

This research has adopted a case-study design for a number of reasons. Firstly, Brannick & Roche (1997) state that the decision to use a case-study design is closely associated with the type of theory and the level of theoretical development available to the researcher. When the researcher is working with conceptual schemes that seek to categorise or describe the broad features of some research issue, research is necessarily exploratory in nature. Our research began with a series of loosely defined concepts of relationship development, communication media selection process, and service and product purchasing between customer and supplier companies. As this research involves an exploratory research design it is suggested that a number of critical cases should be employed.

One multinational company in the information, communication and technology (ICT) sector was selected as the focal firm for this research for a number of reasons: organisational and industry norms are more likely to have commonality (Naryan Pant and Lachman, 1998); the organisational actors have a wide range of communication media to choose from; the company has centralised production and service purchasing managed from one site to enable a direct comparison of the different purchasing contexts; and the researchers were granted extensive access to the company and its suppliers as part of a multiple university consortium research study supported by the focal firm. Within the case studies, the focal firm is referred to as Company X. Literal replication was achieved by studying both within the same context (comparing only product-based relationships; comparing only service relationships) and across contexts (comparing product-based and service relationships). In total, six case studies were selected, which is in line with Eisenhardt's (1989) recommendation of between four and ten cases for exploratory studies. The suppliers were chosen for a number of reasons. The research team asked the management team of Company X to provide a list of suppliers that were similar in a number of ways to minimise differences in size, importance, or management location. The suppliers had to be managed locally; tactical purchasing relationships (strategic purchasing relationships were managed at another site); and they had to be relatively similar in size (all were multinational companies). The team also asked for relationships that were different in a number of ways. The list had to include product-based relationships and service relationships, as well as relationships that were at different stages of development. This resulted in a list of six suppliers. Three product purchasing relationships were chosen: two packaging relationships (relatively new relationships) and one printing relationship (relatively mature). Three service purchasing relationships were chosen: one temporary worker relationship, a construction services relationship (both relatively mature), and a telecommunications relationship (relatively new relationship).

Each of the case studies took the relationship as the unit of analysis and over a six-month period a series of in-depth semi-structured interviews was carried out with buyers and suppliers. A key informant was chosen from the buyer department within the focal firm, and they identified informants in the focal and the supplier firm. The interview protocol included questions on the background of the relationship and contextual factors such as culture and values. In addition detailed questions were asked about the relationship life cycle and communication media. Specific issues such as performance measurement, innovation and conflict were examined, as they comprise the more complex communication episodes in a relationship. The interviews formed part of a broader research project on relationships, and the protocol covered a diverse range of unrelated topics. For the sake of clarity, we only included those questions relevant to the research questions in the extract from the protocol in Appendix 1. We triangulated the data using multiple respondents for each of the relationships with both the supplier and the customer personnel interviewed at strategic and operational levels. Between three and five key informants were interviewed for each relationship, amounting to a total of 21 interviews. Table II below outlines the interview characteristics.

Take in Table II

The initial coding structure was derived from the literature. We included constructs from the media richness theory of communication medium, statement of richness, formality or informality, senses used, language, and feedback. For the stages of the relationship we used the constructs of exploration, negotiation of contract, initiating relationship, process orders, expansion, commitment, monitoring, control, coordination, conflict resolution, and

dissolution of contract. Alternative codes were also developed as the data were analysed, and these are demonstrated in the findings section. While conducting such case-based research it is not uncommon for “constructs to be modified, developed or abandoned during the course of the research” (Voss et al., 2002).

From the initial coding structure, a random selection of interviews was cross-coded by the research team and a final coding structure was developed. This coding structure is reflected in the structure of the findings section below. The results from the data were assessed, discussed and final interpretations were drawn by the research team.

Findings

We found that the buyers and suppliers have a wide range of communication media available to them including face-to-face meetings, telephone, email, instant messaging over the internet, EDI, fax and letter. This was not surprising given the technical nature of the industry sector, and the fact that both the focal firm and supplier firms had comprehensive communication systems installed. The communication media most often used between buyers and suppliers are face-to-face meetings, email and telephone.

Company X uses centralised decision-making, controls, practices and procedures, many of which are written in the Company X procedures manual. Within this manual are specific guidelines for managing relationships. One organisational norm for Company X is that for any written instruction or issue they must give a written reply in either email or letter form. This is usually done by email.

This section draws on the interview data, and is structured in accordance with the results of the data coding. Space limitations restrict us in the presentation of interview data, but a summary of the findings is given in Table III below.

Take in Table III

Exploration: initial negotiation and transactions

In this initial relationship development phase, both buyers and suppliers regard face-to-face meetings with their counterparts as a necessary step to establish good working relationships. All respondents state that relationships are based on a foundation of business competence first. As one buyer reports,

“you develop your relationships on a commercial basis first then [on a] personal basis afterwards”.

Within the product-based relationships, the main communication medium is face-to-face meetings at a high level within each of the organizations. Two of the purchasing relationships were formed within the previous two years. As part of the process of establishing the relationships with Packaging Suppliers (1&2), the buyers arranged formal site visits for the supplier contact to show how the purchased product is used within Company X. This kind of investment in communication in the early stage of the personal relationship is perceived to be worthwhile by both parties.

Service purchasing relationships tend to initially involve a team consisting of the buyer and the internal Company X clients who require the service. At this stage, formal site visits are not used as a communication device.

Although face-to-face meetings are regarded as a key communication medium to initiate the relationship, the structure of the teams is different for product-based and service purchasing. In the product-based relationship the buyer is the main contact for the supplier

but for the service relationship there is a team consisting of the service buyer and the internal client, all of whom agree that face-to-face meetings are vital at this stage. Product buyers also rely on formal site visits to establish the relationship while service buyers do not.

Process Order

Within the product-based relationships, day-to-day activities are handled by the production buyers, who deal with discussion of order volumes, lead times and expediting. All the production buyers express a preference for using the telephone as the main communication medium for the day-to-day fulfilment of transactions.

However, in the Packaging Supplier (2) relationship even though the supplier and buyer express a preference for telephone communication this is not practiced by the buyer. The buyer stated that due to the uncertainty of the supplier's capability he uses formal emails in order to manage the day-to-day activities and will sometimes use the phone for clarification. The product suppliers all prefer using the telephone for the fulfilment of transactions; however, the Printing supplier also uses email to add certainty to the transactions.

This pattern of using more than one medium is common across most cases. The Printing Supplier's response is typical:

"I would probably e-mail and phone, depending on what the issue was [...] it's very important to have things in writing, though rather than just shoot something off to someone in an e-mail, you'd probably ring them and say, 'look, I'm sending this over to you in an e-mail and they would do the same with me.'"

In the service relationship cases, the communication for the day-to-day execution of tasks is generally triadic between the supplier, the buyer and Company X's internal client. The internal client, as the ongoing user of the service, tends to stay very involved in the day-to-day operation of the contract. The majority of communication is between the supplier and the internal client, with the buyer only getting involved when specifically required, especially in more mature relationships (Personnel and Construction). In the newer relationship (Telecoms) the buyer plays a more prominent role, but over the course of the research this role appeared, like the more mature relationships, to be decreasing.

Typically there are regular meetings between the suppliers and internal clients to tease out service requirements and to clarify offerings. The communication between the supplier and the buyer is less frequent and more objective, focusing on tactical issues such as invoicing and payment. In particular, any discussion of additional or revised services takes place initially between the supplier and the internal client, before being referred to the buyer for contractual discussions.

For two of the services buyers (Personnel and Telecoms) telephone and email communication is preferred. Company X's Personnel buyer stated that the preference for email was to leave a paper trail of evidence. She also emails to confirm actions discussed on a telephone call:

"We need back-up, so obviously, I want it via e-mail for back-up but other than that, there are cases where you may have to pick up the phone and ring and say, referring to e-mail, this is what it's relating to – maybe give them a bit of additional information but usually e-mail."

The preferred communication medium for the day-to-day running of the relationship between Company X and Construction Supplier is email. Company X buyer respondent stated:

“It depends on the communication but generally, it would be e-mail when it’s a simple enough issue or it’s recording a couple of actions we agreed to take.”

Email in this relationship is used due to the certainty around the relationship, which has been running for over ten years and due to the advantages of speed and convenience.

In summary, the email and telephone are both used within the relationships. Email is used as a formal communication tool to decrease uncertainty for the buyer and the supplier in relationships characterised by uncertainty of the ability of the supplier and uncertainty of the ability of the buyer. However, email was also used when the relationship was mature as an informal means of communication.

Monitoring and Control

The product-based relationships were characterised by both formal face-to-face performance reviews and more informal assessment using telephone or casual face-to-face meetings. In each of the product-based relationships the suppliers stated that they would assess their performance by informally requesting information by telephone or through face-to-face informal meetings. The Printing supplier stated:

“we would just drop up to have a chat, you know, unofficial type of thing, just to see how things are going”

These informal meetings were seen by the suppliers as a more effective means to assess performance than the formal periodic procedure. However, the buyer in the Packaging (2) relationship would also monitor the supplier using email as a means of creating certainty. Due to the uncertainty perceived by the buyer in this relationship he wanted to provide a paper trail in order to control the supplier and ensure the supplier had an accurate record of requests and issues to deal with.

In the services relationships there are several performance review communication choices. Again, each of the services relationships has formal face-to-face performance reviews but, similar to production, the supplier telephones or has casual face-to-face meetings with the internal client but rarely the buyer. However, in the case of the Personnel supplier, even though they had a mature relationship with few conflicts or issues their preferred communication medium was face-to-face meetings with the internal client. This was due to their proximity of working together but also because the parties were close socially.

In all the relationships studied, performance reviews tend to be face-to-face, formal and uni-directional with only the supplier reviewed. Buyers do not impart information regarding the relative performance of the suppliers compared to other suppliers. Performance reviews are done annually, using a structured evaluation protocol. In addition, there are quarterly reviews and in some cases monthly reviews. The suppliers do not generally wait for the formal reviews to assess buyer satisfaction; they tend to keep a high level of informal communication with the buyer or internal client contact through telephone and occasionally informal face-to-face meetings.

Coordination and Commitment

Conflict resolution is a coordination mechanism to ensure the continuation of the relationship. Relatively small conflicts can occur regarding day-to-day performance or relatively large conflicts can occur which affect the basis of the relationship. Conflict resolution also signals the commitment of the parties to the relationship.

According to the buyer for Packing Supplier (1), if he is informed of issues or problems in writing, he is expected to give a formal written response to that communication. However, he avoids going to print generally as

“e-mail can be a crude form of communication at times...that needs a little bit more discretion, shall we say”.

The Packaging Supplier (1) salesperson respondent has a similar perception of written communication:

“We both agreed that there is no point in sitting there, mulling over a couple of e-mails – we should pick up the phone and ring”.

While both parties follow the procedural requirements to document communication they both exercise personal preference in tending to use the telephone. The parties recognise the importance of tailoring the communication channels to the purpose, particularly when it comes to conflict resolution. According to the supplier

“a lot of things can be done through e-mail and on the phone, but that personal kind of contact, which really does make a huge difference in terms of when things go pear-shaped.”

Two of the relationships (Packaging 1 and Printing) appeared to manage conflict through trust mechanisms and more informal communication media were used. However, in the Packaging 2 case this relationship was still uncertain and more formal mechanisms of conflict resolution are used such as formal email requests and performance reviews.

Conflicts within the services relationships were generally addressed without the buyers' involvement. The buyers used formal control mechanisms to insert themselves into the relationship such as formal meetings or email communication stipulating issues or problems but the informal controls and trust-building happened mainly between the suppliers and the internal clients.

An emergent theme within this phase was that the buyers would be rotated or replaced regularly which meant that although the buyers in the services relationships were not central their movement disrupted the relationship. The Construction supplier referred to an example when one buyer had been replaced by another and they had to help them understand the relationship and provide them with substantial information.

When conflict arose within the product-based relationships the medium was dependent upon the level of trust or certainty in the relationship. For instance in Packaging 1 and Printing conflict was generally dealt with through telephone calls or face-to-face meetings. Where the level of certainty or trust was not apparent more legalistic mechanisms, using email, were employed. This is not apparent in the service relationships where the buyers were involved only in relatively large disputes.

In cases where the personnel within the relationship have changed, there is typically a period during which the buyer and supplier establish a new relationship. This is primarily achieved through face-to-face meetings, similar to the relationship building process in the negotiation phase. This is seen as particularly important to the suppliers, who are keen to develop personal contacts rather than an *“electronic relationship”*. This personal settling-in period involves more frequent communication, particularly face-to-face meetings, and lasts about three months, after which the relationship is considered re-established.

In another case, the Construction supplier invested significant time in helping a new buyer to understand the purchase contract and context, both in order to build the relationship, but also as a necessary step in having a knowledgeable buyer to deal with.

Discussion

Application of the media richness model

In the initial negotiation and transaction phase all respondents agreed that face-to-face communication was key to establishing the foundation for a successful relationship.

In this way, the parties seek the richest media for transferral of information and knowledge, which is not only functional (e.g. contracts) but also behavioural (e.g. trustworthiness of the other party). This supports the proposal put forward by the media richness theory (Daft and Lengel, 1984; Barry and Fulmer, 2004). The research also confirms the role of reducing uncertainty and clarifying ambiguity. When relationships are uncertain, either due to the changing demands of the buyer or due to the abilities of the supplier, email is used as the primary communication tool. At this time, buyers or suppliers need to control the relationship due to an increased level of uncertainty; in parallel to this telephone is often used to minimise any misinterpretation arising from email or to clarify any ambiguity either in activities or behaviour. This would seem, again, to support media richness theory, however, we found that this was not always the case.

When the relationship is mature and running smoothly it seems that email, telephone or face-to-face meetings are used for different purposes. Email is used frequently in these cases due to the advantages of convenience, ease of use and speed. It appears when there is a high level of certainty less rich media are used not as a control tool but as a convenience. We also found that in relationships characterised by high certainty telephone and face-to-face meetings are also primary tools of communication. When relationships involve close personal relationships, or for relationships where parties are in close proximity, face-to-face meetings, the richest communication medium are more often used. It seems with high certainty, if the relationship is characterised by a high social content the parties to the relationship will use face-to-face meetings or telephone.

This shows a difference between media choices not based on the task to be completed or the level of uncertainty or ambiguity but due to the differences in relationship trust and maturity. Therefore paradoxically, email is used both when there is a great deal of uncertainty, in order to control the relationship and when there is little uncertainty and the relationship has a low social content, in order to take advantage of convenience, ease of use and speed. Telephone and face-to-face meetings are both used to clarify ambiguity where there is a high level of ambiguity or where there is a low level of ambiguity due to high social content relationships or alternatively as a function of proximity. Therefore, we propose a dual role for the model inserting a social content factor as influencing the choice of communication media.

Buyer-supplier relationship development process

As the basis for this research we used a combination of two models (Dwyer et al, 1987; Subramaniam and Shaw, 2002) and from our findings it appears that the two models are linked. The first model (Dwyer et al, 1987; Claycomb and Frankwick, 2005) infers a general relationship level of development, the second an activity-based and behavioural development model.

The research examines the communication processes between buyer and supplier and at the search or awareness stages no communication has taken place, so for this research the awareness and search stages are assumed to have occurred.

The next stages within the two models, exploration and order processing are regarded as in some ways similar and in others different. Exploration is the initial interactions and transaction; processing the order is purely transaction-focused. From our research it became clear that there were a behavioural dimension as well as a functional dimension to this stage, with respondents using different communication media when negotiating (face-to-face meetings) and processing (email and telephone).

Expansion and commitment, in the Dwyer et al. (1987) model appear to be similar behavioural dimensions and in our research this stage appeared to be an extension of the processing stage. Monitoring & control and coordination also appear to be similar stages

and have both behavioural and functional concepts as they include negotiating the contract and managing the relationship.

Following the research analysis and deconstructing the two models, we propose to split the relationship development process into functional and behavioural aspects and propose that monitoring & control and coordination are continuous activities throughout the process (see Figure 1).

The communication between buyer and supplier begins with the function of negotiating the contract. At this stage, the behaviour of initiating the relationship occurs simultaneously as perceptions are gathered and expectations met or not met. This stage leads onto the functional stage of the day-to-day fulfilment of the transaction and, at the same time, experiencing the relationship.

The next stage occurs when the relationship changes either through changing customer needs or through changing capabilities of the supplier. At this stage, conflict can occur and conflict resolution has to occur to prevent dissolution of the relationship. Several outcomes can happen at this stage, either the re-negotiation of the contract, for a major change, or a minor change is undertaken at which point the transaction is again fulfilled.

The monitoring and control and coordination phase appears to occur at each stage of the relationship development process. At the initial contract stage the coordination mechanism is the contract, which is monitored and controlled by both parties. As the relationship develops, coordination efforts increase leading to a need to transfer more information between the two parties. The research showed that at this time, the relationship is monitored by experience and controlled by performance appraisals or reviews. As the needs of the buying company or the abilities of the supplying company change, coordination could take the form of re-establishing or re-negotiating the relationship and/or the contract and forms of conflict resolution if the relationship is to continue. The re-established or re-negotiated relationship is then monitored through experience and controlled again through performance perception and appraisal.

Take in Figure 1

Differences between products and services

Within the product and services relationships the main differences in communication media stem directly from the position of the buyer within the relationship. For instance, in the product-based purchasing relationships, the buyers are central to the on-going management of the relationships and their preferred medium of communication is telephone, although they use email to reduce uncertainty within relationships that are not underpinned by trust or a good personal relationship.

This would suggest that on the whole product buyers, who have a more central role in the buyer-supplier relationship, develop close relationships in order to reduce uncertainty, leading to the reduction of formality in their communication choice.

In the service purchasing relationships, the buyers are regarded as more peripheral to the on-going management of the relationships, with internal managers playing a more central role. Much of the services management literature is based on a two-way exchange between buyer and supplier. However the triadic structure of services relationships that we have identified adds an extra level of complexity in terms of customer contact in service relationships. In these cases, the buyers prefer a dual approach of email and telephone, it would seem as a means to assert control on the relationship and reduce their uncertainty regarding the fulfilment of transactions and changes in transaction needs or abilities.

Therefore, as the buyer becomes less central in the relationship this leads to greater uncertainty and the need to reduce uncertainty through more formal communication choices. Service contexts are characterised by ambiguity uncertainty and variability. As such, both the triadic structure of some B2B service relationships *and* the intangible, heterogeneous nature of services leads to different outcomes in terms of media choice. Our findings are consistent with those of Vickery et al. (2004) who found that rich media are essential conduits for learning and knowledge transfer within supply chain networks. Rich media are better at transmitting highly complex and/or tacit knowledge and in supporting extensive versus routine problem solving. However, in this case it would also seem that when rich media is lacking, due to the position in the relationship, buyers have to assert control by using formal, less rich, but more legitimating media such as email.

Conclusions and Future Research

The main questions answered by this study are do communication media choices differ as the relationship develops and what motivates the specific choice of communication media in product and service purchasing contexts. We found that communication media choice is influenced by the development of relationships in a paradoxical way. If the relationship is relatively new the preferred communication media will be face-to-face meetings in order to take advantage of the richness of the media. As the relationship develops from one of ambiguity to one of increasing certainty the communication media choice becomes less rich focusing on either telephone or email depending on the needs of the buyer or supplier. In certain mature relationships that have been running for several years, buyers and suppliers, paradoxically, again use the richest medium face-to-face relationships. This is assumed to be due to the social or proximal benefits of the relationship. Other relationships, that have neither social nor proximal benefits, revert to email as the medium of choice.

The study also found key differences between communication media choice in product and service purchasing contexts. It appears that in product purchasing the buyer is more central to the relationship and has greater influence over the communication media choice, in these cases preferring more informal communication using the telephone. In service purchasing, the buyer is less central to the relationship, perhaps due to the more ambiguous nature of services creating a need for the supplier to engage with the user of the service rather than the buyer. The buyer then seeks to control the relationship more using legalistic means such as email to insert control and formality into the relationship.

This study has shown that the current theory is limited by the assumption of media richness both temporally and contextually. Communication media choice is not only influenced by the stage of relationship development but also by whether the buyer is purchasing services or products.

The implications for practitioners are that at the beginning of relationships it is helpful to have face-to-face meetings between the parties involved. In the product purchasing context this should be between the buyer and the supplier, while in the service purchasing context this should include the buyer, supplier and the service customer. This use of rich information communication media appeared to have advantages for the parties involved including adding value within the relationship through new product or service ideas. It seems that in the day-to-day running of the relationship telephone and email are sufficient. However, during conflict resolution the choice of media is critical. The rich informal communication media such as telephone and face-to-face meetings provided better outcomes. However, in the service purchasing contexts this has to include buyers who are not necessarily involved in these meetings. It is, therefore, important to make sure

service buyers are fully integrated into the relationship in order for them to manage conflict resolution. In more developed relationships, it may be helpful to have proximity to suppliers and to create opportunities for face-to-face meetings. This could revive and add value to the relationships, as was the case in this study.

At a strategic level, the findings suggest that a prescriptive approach to communication with suppliers could hinder effective communication; for instance, by promoting electronic communication in all circumstances, or by not making diverse communication media available. The study also indicates that policies such as buyer rotation do have a disruptive effect on the relationship, necessitating a renewal phase when personnel are changed.

Further research should address the limitations of the current study: the selection of a single buyer firm across the cases, the lack of longitudinal data on the relationships, and the limited number of cases analysed. Longitudinal research would allow for analysis of media selection as the relationship progresses. Further survey research on media selection should take account of the dual media usage, by exploring its occurrence during the relationship development process. In particular, more complex communication constructs need to be developed, to get beyond the typical survey questions on communication – how frequently do you communicate, do you use meetings/phone/email, and is your communication satisfactory? Should a more incisive survey instrument be developed, the findings of further research would provide valuable insights into communication media selection in a wider context.

Appendix 1 - Interview Protocol Extract

BACKGROUND

- Age
- Job Title
- Education: professional and academic
- Number of years with the company? In this role?

STRATEGY, CULTURE AND VALUES

- How would you describe the culture of the company?
- Is there a company strategy? What is it?
- What are the best aspects of your job?
- What would you say motivates you personally?

RELATIONSHIP BEGINNINGS

- What is your role in the relationship with XXX?
- How was the decision made to do business with XXX?
- What information was important for choosing that company?
- Can you describe the beginning of relationship?

DEVELOPING

- How would you describe the relationship now?
- Who has responsibility for managing the relationship?
- How much time do you spend on this relationship?
- How would you describe your relationship with your opposite number in XXX?

COMMUNICATION

- What types of communication are used in relationship?
- How often would you meet with your counterpart in XXX?
- What communication media do you use?
- What issues would make you choose one medium over another?

PERFORMANCE MEASURES

- Is the performance of the relationship measured? How is it measured?
- How is your personal performance measured?
- Is there feedback when you have done a good job?

INNOVATION AND INFORMATION EXCHANGE

- Does the supplier come up with improvement ideas?
- What knowledge or information would be exchanged between XXX and the supplier?

CONFLICT

- What would tell you that things have started to go wrong in the relationship?
- How would you deal with that?
- How would you end a relationship with a supplier?
- What would stop you ending a relationship even if things were going wrong?

FINALLY

- Can you suggest anyone else we should talk to about the relationship?

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Table I: Media richness scale

Medium	Richness	Formality	Senses Used	Language	Feedback
Face-to-face	Highest	Informal	Visual, audio	Body, natural	Immediate
Videoconference	↑	Informal	Visual, audio	Body, natural	Immediate
Telephone		Informal	Audio	Natural	Immediate
Instant Messaging		Informal	Visual, audio	Natural	Immediate
Email		Formal	Visual, Audio	Natural	Quick
EDI		Formal	Limited Visual	Natural	Quick
Mail	↓	Formal	Limited Visual	Natural	Very Slow
Numeric		Formal	Limited Visual	Numeric	Slow
	Lowest				

Adapted from Daft and Lengel (1984)

Table II: Number of respondents and length of interviews

Relationships	Focal firm managers interviewed		Focal firm buyers interviewed	Supplier managers interviewed	Supplier salespeople interviewed	Length of interviews (mean)
Company X – Packing Supplier (1S)	Overall Purchasing Manager	Production	1 Buyer	2 Managers	Salesperson	1.75 hrs
Company X – Packing Supplier (2C)		Purchasing	1 Buyer	Manager	Salesperson	1.25 hrs
Company X – Printing Supplier		Manager	1 Buyer	Manager/ Sales*		1.5 hrs
Company X – Telecoms Supplier		Services	1 Buyer	Manager/ Sales*		1.5 hrs
Company X – Personnel Supplier		Purchasing	2 Buyers	Manager	Salesperson	2.5 or 1.5 hrs
Company X – Construction Supplier		Manager	1 Buyer	Manager	Salesperson	2 hrs

*These manager/salespersons were involved both in the strategic decision-making as well as the day-to-day running of the relationship

Table III: Summary of the findings

	Packaging 1	Packaging 2	Printing	Telecoms	Personnel	Construction
Exploration	Face to face preferred Formal site visits Buyer central to relationship	Face to face preferred Formal site visits Buyer central to relationship	Face to face preferred Formal site visits Buyer central to relationship	Face to face preferred No site visit Internal client central to relationship	Face to face preferred No site visit Internal client central to relationship	Face to face preferred No site visit Internal client central to relationship
Process Order	Buyer central to relationship Buyer prefers telephone for day-to-day tasks Supplier prefers telephone	Buyer central to relationship Buyer prefers telephone but uses email and telephone for day-to-day tasks Supplier prefers telephone	Buyer central to relationship Buyer prefers telephone Supplier prefers email and telephone	Supplier has relationship with internal client Formal tasks with buyer Internal client and supplier prefer face-to-face and telephone Buyer prefers email and telephone	Supplier has relationship with internal client Formal tasks with buyer Internal client and supplier prefer face-to-face and telephone Buyer prefers email and telephone	Supplier has relationship with internal client Formal tasks with buyer Internal client and supplier prefer face-to-face and telephone Buyer prefers email and telephone
Coordination	Buyer and supplier are new and formed strong bond Trust mechanisms	Conflict due to uncertainty around supply capability Formal control mechanisms	Supplier helped new buyer with information on relationship Trust mechanisms	Formal control mechanisms	Formal control mechanisms	Supplier helped new buyer with information on relationship Formal mechanisms
Monitoring	Informal monitoring by telephone Formal quarterly reviews	Formal day-to-day monitoring by buyer email Informal telephone calls from supplier Formal quarterly reviews	Informal day-to-day monitoring by face-to-face or telephone Formal quarterly reviews	Formal emails from buyer Informal telephone calls from supplier Formal quarterly reviews	Mix of emails and telephone calls from buyers and suppliers Formal quarterly reviews	Formal emails from buyer Informal emails from supplier Formal quarterly reviews

Figure 1: Relationship Development Process