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Information Providers Behaviour: Communication as a Process in Information Behaviour of Pharmaceutical Companies: Part 2

Aondoana Daniel Orlu
orludaniel@gmail.com

Benjamin Jirbee
benjirbee@gmail.com

Kaase Dominic Imeh
kaaseimeh@gmail.com

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Abstract

As pharmaceutical companies are sponsors and producers of much of the research evidence for new medicines, it is important that they make that evidence available to the NHS as soon as possible and that users in the NHS are able easily to access it, evaluate it and use it in clinical decision-making. When healthcare professionals refer to information provision by the pharmaceutical industry, however, they often focus on advertising and promotional information and question its value or they claim that the industry supplies biased information. In order to gain in-depth insights into information providers’ views of their roles and activities, qualitative interviews were carried out with employees of a selection of pharmaceutical companies in the UK. Interviews were carried out by telephone to minimize inconvenience to the participants and in the hope of encouraging participation. The findings indicate that, companies’ information behaviour is influenced not just by their internal context and goals but also by the external context in which they operate, including legal requirements. The ISCM also refers to personal context, training, experience and job role as possible influences on information providers’ behaviour. In addition, it takes a novel approach in using existing theory not only from library and information science but also from communication studies. As a result, the ISCM is more comprehensive in scope than most other models, covering as it does the information user, information seeking and use, the information provider and communication.
1.1 Introduction

The research-based pharmaceutical industry is the single biggest sponsor of medicines research in the UK and the USA and is thereby the largest generator of information about new medicines (Collier and Iheanacho, 2002). Such information includes the findings from clinical trials, most of which are sponsored and designed by pharmaceutical companies (Goldacre, 2012; 172). The industry spends heavily on information products and activities aimed at health care professionals, including advertisements, presentations by sales representatives, websites and responses to enquiries. It has been claimed that “Although the primary function of drug companies is to develop and market drugs, these companies spend more time and resources generating, gathering, and disseminating information” (Collier and Iheanacho, 2002).

In the UK the main purchaser of prescription medicines is the National Health Service, which spends more than £12 billion a year on medicines (ABPI Code of Practice for the Pharmaceutical Industry, second 2012 edition). As pharmaceutical companies are sponsors and producers of much of the research evidence for new medicines, it is important that they make that evidence available to the NHS as soon as possible and that users in the NHS are able easily to access it, evaluate it and use it in clinical decision-making. In the words of the Standing Committee of European Doctors and the European Federation of Pharmaceutical Industries, “Cooperation between the medical profession and the pharmaceutical industry is important and necessary at all stages of the development and use of medicines to secure safety of patients and efficacy of therapy ...Information given to physicians by the industry is essential for

When healthcare professionals refer to information provision by the pharmaceutical industry, however, they often focus on advertising and promotional information and question its value or they claim that the industry supplies biased information (Collier and Iheanacho, 2002; Lexchin, 1993; Melander et al., 2003; Shaughnessy and Slawson, 1996). Pharmaceutical companies are of course driven by commercial goals: they develop and market medical products in order to make profits.

The information that they disseminate about those products is often promotional in nature, emphasizing the benefits that they can provide in the treatment of patients. The aim of pharmaceutical advertising and other marketing activities is to encourage physicians and other health care professionals to prescribe or use a particular company’s product(s). Companies’ activities in this regard have led to concerns about the influence of the industry and its motives. The Royal College of General Practitioners, for example, commented: “There is a perception amongst professionals and the public that the pharmaceutical industry’s drive for profit has overridden considerations of honesty, openness, and cost-effectiveness” (Royal College of Physicians, 2009; 9). Such concerns also relate to the influence of information provided by opinion leaders employed by pharmaceutical companies: “The information available to doctors and the public is greatly influenced by an elite group of key opinion leaders. These doctors are often respected clinical investigators or specialists who may be paid to speak or write on behalf of a company. Their views are often promoted as considered expert opinion about a particular medicine and its efficacy and safety” (Royal College of Physicians, 2009; 15).
However, pharmaceutical companies also provide factual, non-promotional information, for example at scientific meetings and through their medical information departments in response to requests for information (Robson and Riggins, 2001). Provision of information by the UK industry is governed by the Human Medicines Regulations 2012 (http://www.legislation.gov.uk/uksi/2012/1916/contents/made). Most companies also agree to comply with the ABPI Code of Practice for the Pharmaceutical Industry (http://www.pmcpa.org.uk/thecode/). Among other requirements, the ABPI Code stipulates that “Information, claims and comparisons must be accurate, balanced, fair, objective and unambiguous and must be based on an up-to-date evaluation of all the evidence and must reflect that evidence clearly. They must not mislead either directly or by implication, by distortion, exaggeration or undue emphasis” (Clause 7.2). Because of the potentially important role of pharmaceutical companies in supplying evidence about medicines to health care professionals it is of interest to investigate the validity of the ISCM in representing their behaviour as information providers. This is particularly so because of the concerns expressed about the industry’s commercial motives and possible bias in the information it produces.

2.1 Literature Review: Ingwersen and Järvelin model

Figure 1 shows one of the graphical representations of the cognitive model of information behaviour developed by Ingwersen and Järvelin (2005). The model focuses on information seeking and retrieval but it includes the various “cognitive actors” involved:

• Authors of information objects

• Information seekers
- Designers of database structures and systems, interfaces, retrieval functionalities etc.

- Human indexers

- Selectors deciding on the availability of information objects (examples mentioned Ingwersen and Järvelin include journal editors, database producers, reviewers and conference organizers)

- Communities of individuals organized in a social, cultural or organizational context

Figure 1, Model of interaction Information Seeking Retrieval and Behavioural Processes (Ingwersen and Jarvelin, 2005; 261).

The inclusion in this model of information providers (authors), as well as information seekers, and of selectors, system designers and indexers makes it a more general representation of information behaviour than those already discussed. The graphical representation of the model is fairly simple but Ingwersen and Järvelin provide much
more detail of the framework and underlying concepts in their written description of it (Ingwersen and Järvelin, 2005, Chapter 6).

One factor of great importance in the model is context. Unlike Leckie et al. (1996), Ingwersen and Järvelin refer to the different contexts of the information seeker, the author, the selector and the other actors involved. Authors are influenced by their context to communicate information and the intended meaning of that information is also affected by the context. NICE, for example, which is charged with the responsibility of providing “national guidance on the promotion of good health and the prevention and treatment of ill health” (http://www.datadictionary.nhs.uk/), produces guidelines in order to influence health care professionals’ clinical practice.

The pharmaceutical industry communicates information through advertising and other means in order to bring its products to the attention of health care professionals and to increase sales. The recipients interpret the information, and “their context determines the nature of the interpretations that are made” (Ingwersen and Järvelin 2005; 260). Thus the intended meaning and the received meaning may not be the same. For example, a guideline produced to reflect best clinical practice, which is based on evidence from clinical trials, may not be regarded by a physician as best practice because it does not take into account his/her medical knowledge or the differences between patients in clinical trials and those seen in everyday practice (Feinstein and Horwitz, 1997; Tonelli, 2006). When considering the information activities associated with health care provision, the differences in context between the various players involved – physicians, NHS bodies, NICE, the pharmaceutical industry – need to be taken into account.
2.2 Dervin’s Sense-Making

Dervin’s Sense-Making (Dervin, 2005; Dervin et al., 2003) was not developed as a model but as a framework for research, “a conceptual tool of broad applicability for use in understanding the relationship of communication, information, and meaning” (Tidline, 2005). It is included here because it has had much influence on studies of information behaviour, in both communication and LIS disciplines (Tidline, 2005), and because Dervin has summarized its key ideas in the form of a diagram (Figure 2), which can be seen as a model. This representation of Sense-Making shows a person facing a “gap” – a situation that the person needs to make sense of. As described by Romanello et al. (2003), this representation consists of the:

1. “Situation or the time-space contexts within which sense is constructed;

2. Gap or the “information needs,” or questions people have as they construct and deconstruct sense while moving through time-space that need bridging;

3. Verbings: sense-making and sense-unmaking of the individual;

4. Bridge or the assemblage of ideas, emotions, attitudes and memories, from the past, present and future moments that the individual constructs to negotiate the gaps and uses to move from one moment to the next; and

5. Outcomes or the information uses or helps and hurts that the individual puts into newly created sense.”
Dervin’s Sense-Making emphasizes how a person’s understanding and handling of information is affected by personal factors and the environment.

Although the “Sense-Making metaphor” (Figure 2) focuses on an individual who seeks information, Dervin developed Sense-Making as a method “to study and implement communication communicatively ... Sense-Making assumes that all communication is designed but that most designs, even when well meaning, are habitual, unstated, and based on transmission assumptions. Sense-Making’s intent is to provide general guidance for how to ensure as far as possible that dialogue is encouraged in every aspect of communication campaign research, design, and implementation” (Dervin et al., 2003; 236). Sense-Making thus emphasizes the importance of two-way dialogue between the information provider and user to ensure that communications are effective in achieving the goals of the provider and meeting the needs of the user.
The Sense-Making framework raises the question of what is meant by information. Dervin challenges the idea that information is a thing that can be transmitted unchanged from one person to another. She dismisses the hypodermic needle metaphor of communication in which information is seen as being injected into people’s minds (Dervin et al., 2003; 37). “Instead of being seen as having an absolute, accurate, isomorphic relationship with reality, information is seen as being a product, a creation of human observing at specific points in time-space. Information has meaning only in the context of the constraints on the human observing that created it. It is relative to its creator and meaningful only in that context.” (Dervin et al., 2003; 200). The relevance of this conception of information to health care will be seen later in this research: those who communicate information about medicines to health professionals may need to take into account personal and environmental factors that affect the way in which health professionals interpret and deal with that information.

Further insights into communication as part of information behaviour can be gained from communication theory.

2.3 Mass communication and information diffusion models

Various communication theories and models have been developed relating to mass communication – the process of communication by an organization to a large audience (Baran and Davis, 2003; McQuail and Windahl, 1993) – and information diffusion (Rogers, 2003). There have been few if any attempts to link them to LIS models but they can shed additional light on the communication and information behaviour of individuals. Whereas LIS models typically focus on the information seeker and information seeking behaviour, communication models focus on the communicator and the effectiveness of the communication process. They often describe one-way
communication, directed by the sender, who thus influences the recipient. The focus in such transmission models is on whether the communication produces the effects intended by the sender, rather than on the recipient’s situation and needs. This is summed up in Lasswell’s (1949) formulation: “Who says what to whom through what medium with what effect?” A number of influential communication models are discussed here, from one of the earliest (Shannon and Weaver, 1949) to one of the most recent (Thackeray and Neiger, 2009). They are not reviewed in such detail as the LIS models because the primary aim is simply to identify any additional characteristics of information behaviour that are particularly relevant to communication.

2.4 Shannon and Weaver’s information theory

Shannon and Weaver’s information theory (1949) is mentioned briefly here as it produced one of the most influential models of communication (Figure 3).

![Figure 3](image.png)

**Figure 3**, Shannon and Weaver’s Models of Communication (Shannon 1948)

This model shows communication as a one-way process. The information source produces a message and the transmitter operates on this to produce a signal for transmission over a channel. Shannon’s examples of channels included “a pair of wires, a coaxial cable, a band of radio frequencies, a beam of light, etc.” (Shannon, 1948). The signal may be disrupted by noise or interference – for example by other
signals in the channel. The receiver performs the inverse function of the transmitter, reconstructing the message from the signal. The destination is the person for whom the message is intended. This model was developed in connection with Shannon’s work at Bell Telephone as part of a mathematical description of information transmission in telecommunications. It does not overtly take into account the many human factors involved in communication and so it is of limited value in describing information behaviour.

3.1 Method

In order to gain in-depth insights into information providers’ views of their roles and activities, qualitative interviews were carried out with employees of a selection of pharmaceutical companies in the UK. “The qualitative interview is a key venue for exploring the ways in which subjects experience and understand their world. It provides a unique access to the lived world of the subjects ...” Kvale (2007; 9). Semi-structured interviews were held with UK-based staff in pharmaceutical companies.

3.2 Interview and coding procedures

To provide structure to the interviews and ensure that each participant was asked about the same topics, the interview guide in Box 1 (Appendix 1) is for staff of pharmaceutical companies. Because the aim was to test the validity and applicability of the Information Seeking and Communication Model the questions sought to explore elements of information behaviour suggested by the model. They covered the interviewee’s context including role and background, the information provided by the organization (pharmaceutical company or NICE) for physicians, its aims or goals in doing this, and the perception in the organization of physicians’ information needs and of appropriate information sources. The interview guide for pharmaceutical company
staff also included a question about their perceptions of the distinction, if any, between advertising and information provision. In the ISCM credibility and utility of information and sources are important factors affecting information behaviour. Interviewees were therefore asked about the credibility of information sources and how this might be judged and how communication or provision of information could be improved to increase its utility.

Interviews were carried out by telephone to minimize inconvenience to the participants and in the hope of encouraging participation. Telephone interviewing in qualitative research has been reported to be capable of producing comparable results to those from face-to-face interviews (Sturges and Hanrahan, 2004). The interviews were recorded, with permission from the interviewees, and were then transcribed. The transcripts were sent to the interviewees to check for accuracy.

To try to ensure consistency in coding the use of coding terms was compared between transcripts. In addition, four of the transcripts were coded twice at intervals of several months to check for possible discrepancies but no major differences were found. If any text did not seem to be adequately represented by the existing codes a new term was added. At the end of the analysis, new terms and the concepts they represented were reviewed to determine whether modifications to the model were needed.

3.3 Interview participants

As this is a qualitative study, the number of interviewees was not specified in advance. “To the common question about interview inquiries, ‘How many interview subjects do I need?’, the answer is simply: ‘Interview as many subjects as necessary to find out what you need to know.’” (Kvale, 2007; 43). The interview transcripts were analysed on a continuing basis and new interviewees were included until:

- enough information had been gathered to assess the model;
• a clear picture had been obtained of the perspectives from the pharmaceutical companies; and
• no further insights were likely.

Seven pharmaceutical companies were selected, representing a mix of large, medium and small companies with headquarters in the UK, Europe, the USA or Japan. Details of the research were sent by email to the UK offices of the companies inviting them to participate and to nominate an experienced member of staff from the medical department and another from the marketing department to be interviewed. The reason for inviting participation from the two departments was to obtain different perspectives. The medical department in a pharmaceutical company is normally responsible for providing factual medical information in response to enquiries from health professionals (Robson and Riggins, 2001), while the marketing department is responsible for the company’s advertising and promotional activities (Levy, 1994).

Nine members of staff from seven companies agreed to participate – one person from each of seven companies and two from one company. Of the seven participating companies, two have headquarters in the UK, two in the USA, two in Germany, and one in Japan.

Four of the interviewees were from medical or compliance departments (the compliance function having responsibility for ensuring a company’s compliance with legal requirements and regulations and with the pharmaceutical industry’s codes of practice) and five were from marketing/sales departments. Four were male (46%) and five were female (54%). All 9 had degree-level or higher qualifications and four were qualified health care professionals: two were physicians, two were pharmacists and one was a nurse. Their experience in the pharmaceutical industry ranged from 3 to 30 years (mean 13.2 years). four of the nine who had qualified as health care
professionals had spent between 0 and 15 years in the NHS (mean 7.9 years) before moving to the pharmaceutical industry; the ninth interviewee did not provide this information. Thus the majority of the interviewees had experience of working in both the pharmaceutical industry and the NHS. The final interviews revealed no further insights beyond those gained from the earlier interviews, suggesting that the sample size was adequate to provide a representative selection of companies’ views.

4.1 interviews and result

A defining element of a pharmaceutical company’s context is that it is a commercial organization that is in business to make a profit – without profits a company will not survive – and a prime reason why companies issue information is to promote sales of their products. This is clear from the following extracts.

- Extract B11

  I head up a marketing team with six direct reports that manage the two products that sit within our portfolio ... It’s my role to manage the promotional messaging and information that lands to all stakeholder groups both internal and external in order to drive appropriate uptake of that medicine with patients.

- Extract E11

  I will be responsible in the main for promotional material which concerns our brand and obviously we work with our med affairs team when it’s to do with education in the disease area, or that sort of thing. Internally we obviously have a voice in what priority we communicate the educational factors which support the area which our brand plays in
Extract K53

With promotion you’re selecting key benefits that you think are particularly going to strike a note, resonate with the prescriber and so you are focusing particularly on some benefits that maybe give your drug an advantage in the class or in the therapy area. Whereas information is more of a balance, there’s no particular emphasis on any one part of the drug’s profile.

Extract F101

At the end of the day we’re a commercial company, so yes we want to sell our drugs.

The two marketing managers quoted in extracts B11 and E11 see their responsibilities as being to manage “promotional messaging”, “drive appropriate uptake” of the company’s medicines and to support the “brand”. Extract K53 distinguishes between the promotional and non-promotional information that a company produces, noting that the former focuses on the “benefits” of the company’s product compared with other medicines whereas the latter is more balanced. These quotations illustrate how the commercial nature and goals of a company influence much of the information it provides for physicians and other health care professionals, a fact concisely summarized in extract F101.

There are other important contextual factors that affect pharmaceutical companies’ information behaviour and moderate a purely commercial approach to information provision. The pharmaceutical industry operates in a heavily regulated environment and has to comply in its activities with legislation including the Human Medicines Regulations 2012 (http://www.legislation.gov.uk/uksi/2012/1916/contents/made), which regulate the advertising and promotion of medicines. The industry’s self-regulatory code, the ABPI Code of Practice for the Pharmaceutical Industry...
(http://www.pmcpa.org.uk/thecode/), sets out requirements and standards for advertising, promotional activities and the provision of information that accord with the various legal and other requirements. Under the ABPI Code companies are required to review advertising and promotional material and to certify that it complies with these requirements. Senior staff members within the company are responsible for certifying material and at least one of them must be medically qualified or a pharmacist. The following extracts illustrate companies’ procedures in this regard.

- Extract J11

Most pharmaceutical companies have a medical team, a medical department, and within the medical department will sit physicians that are medically qualified that have moved out of practicing clinical medicine into industry. So their role is around ethical obligations, ensuring that practices around promotion, around material that’s provided externally is suitable both from an ethical perspective and also compliant with the UK Code of Practice.

- Extract N71

We in the industry have the ABPI Code, which we must adhere to. And obviously any promotional claim or any data that is included in any promotional material is reviewed by a medic – doctor or pharmacist – and goes under internal review by a number of individuals to ensure that that claim is not ambiguous, there’s no hanging comparisons for example, it can be substantiated by data and it in no way puts patient safety at risk.

- Extract H63
The medic team and the medical director who actually approve our final bits of material, they are trying to absolutely take out that bias and they will question us if it comes over ... they will definitely push it back if they can see any bias.

- Extract F11

Business Compliance Director, which means ABPI Code-related – keeping us as clean as possible with regard to Code issues; responsible for all of the SOPs that may fall out of the Code; and liaising with our Europe regional compliance team, because a lot of our directives and SOPs are European that we have to work with ... I get heavily involved with our ... anti-bribery testing is probably the broader term these days with the UK Bribery Act and the Foreign Corrupt Practices Act testing we have to do, business control function testing ... so we have quite strict controls.

Thus companies’ information behaviour is influenced not just by their internal context and goals but also by the external context in which they operate, including legal requirements.

The ISCM also refers to personal context, training, experience and job role as possible influences on information providers’ behaviour. Extracts J11 and N71 refer to an important role of senior staff who are qualified physicians or pharmacists in reviewing promotional and other material to ensure compliance with the ABPI Code of Practice and with appropriate ethical standards.

Extract H63 is a quotation from a marketing manager suggesting that marketing staff may produce information that is biased and, if so, that the medical reviewer will “push it back”.
The company context or culture is not purely commercial: ethical considerations and a concern for patients also have an important influence as is evident from the following extracts.

- Extract C31

  *First and foremost we have a responsibility ... The responsibility, certainly in the medical mind, is very much framed around the risk-benefit profile, to absolutely make sure that if a patient's getting a medicine, then the patient's not being put at undue risk as a consequence of that decision. We do that by influencing and shaping the sales conversation – and the materials of course. We do that by the supply of the medical information service. And for specialists' needs particularly we do that by the supply of medical science liaison staff who engage in a deeper, more scientific conversation.*

- Extract E34

  *Interviewer: So you need to try to reduce the risk of problems with potential toxicity or side-effects of a product occurring – is that right?*

  *Interviewee: Absolutely, yes, and for the obvious reason of the positive experience for the patient and the physician of our product, and of course the clear responsibility we have as a pharmaceutical organization or company or even as an industry, it's the standard at which we work. So it's almost like breathing, it is what we do – we have to make it clear. We wouldn't obviously be putting products on the market if they weren't safe either*

- Extract K28

  *Interviewer: What are your company's aims in providing information for doctors?*

  *Interviewee: I think the same aims as any company, which is to be accurate, balanced, fair, objective, and point out the pros and the cons*
and make sure that patients are getting the right medicine at the right dose. I mean ultimately it does not benefit [the company] – in fact it’s to their detriment – if patients suffer adverse events on our medicines. So from not only ... hopefully from primarily an ethical standpoint but also from a business standpoint we want to enjoy a good reputation amongst healthcare professionals and patients. And therefore it’s really important that the old cliché, the right medicine to the right patient at the right time in the right dose actually happens.

- Extract N12

Speaking from medical and scientific affairs, the aim that we would have ultimately is to ensure that the drug is used for the benefit of patients in the most efficacious and safest manner, and putting the patient at the centre of what we do.

The extracts discussed so far also illustrate two other important features of information behaviour shown in the ISCM: motivating and inhibiting factors. Commercial goals can be seen as motivating factors leading to the production of promotional information, while legal or code of practice requirements and ethical considerations can be seen as inhibiting factors that moderate what is permissible in advertising claims. According to the ISCM, perceptions also play an important role in information behaviour. Several interviewees expressed their perception that the pharmaceutical industry has a generally poor image among health care professionals and the public.

- Extract B43

One thing that the industry has suffered from, particularly over the last decade is a poor reputation when it comes to credibility and trust. I think this is one area that we need to tackle head on.
I think we’re just still seen as big bad people, nasty people – that we’re trying to take their money ... high cost drugs.

I feel it [information from the pharmaceutical industry] is quite credible but I think the external perspective is – if you read the general lay press, or when you speak to the healthcare professionals – they feel it’s not as credible because there is this perception that companies are not telling the truth.

I still think that a lot of information we produce is always viewed sceptically by the medical profession.

The following extract suggests that this perception of a negative image of the industry is leading to a change in approach to communication:

The sales reps model has been shown recently to have failed. It might have worked in the past but the number of sales reps is half what it used to be and there’s a good reason for that and that’s because doctors don’t listen to them because they aren’t credible. And also doctors aren’t decision makers any more to a degree. So, the provision of scientific information, appropriate information, unspun – warts and all – is what the industry needs to do.

In the next two quotations, both from the same interviewee, the traditional method of communication by sales representatives using “key messages” is contrasted with a
“two-way dialogue” approach in which the representative seeks to provide information relevant to the physician’s needs.

- Extract B24

Sales representatives were telling doctors what the key messages were for a medicine and those messages would be in effect trying to penetrate a very noisy environment compared to other pharmaceutical companies who would be doing exactly the same. So it was very old school traditional top-down ... producing messages that tell the customer what to do.

- Extract B31

So instead of simply bombarding or telling customers the key messages it’s much more about trying to drive two-way dialogue, to understand specifically how this medicine can support what that individual physician is looking to do.

This change in approach to communication was also reflected in comments from other interviewees:

- Extract C22

So it’s a much more balanced conversation based upon the needs of ... the working needs of the prescriber rather than the selling needs of the pharma rep. That’s the conversation that we get really good market research and feedback off of.

- Extract F31

They [representatives] are expected to be able to hold a reasonably intelligent conversation with their customer these days, whereas in the old days they’d go in with a detail aid and they’d literally quote the detail aid at them. We expect them to be better than that now. For example, in our diabetes area we have a course with [a] university
that all our representatives are expected to take, in the diabetes arena, so we make sure they actually understand the disease area rather than just going in and selling the drug.

- **Extract E54**

  So, particularly in secondary care, I think that the value now is not about just selling the key messages and the key information, it is about having a discussion about patient pathways, about service provision, about reimbursement, about formulary access – it’s much more a business approach. And integrated into that is why you are there, which is to sell your product. As suggested by the above extracts, companies’ perceptions of physicians’ needs have a major influence on the information that they provide and how they communicate it.

- **Extract C44**

  The information that’s supplied as part of our sales and marketing efforts is very much guided by our understanding based on research on what doctors’ needs are. That is supplemented to varying degrees by the question profiles that come through from Med Info – not as much as I would like it to do but actually monitoring that across the system so the type of questions that are being asked is pretty challenging. If Med Info become aware of a consistent theme, then that is shared through so that we can have proactive communication by the front line on that.

- **Extract G22**

  In an ideal world you’d hope that we are meeting the needs of what the scientific community wants to hear about our products. It’s probably – with any company that I’ve worked for – a balance between ... balancing that need and the needs for information and knowledge about our products we would like to be out in the community. So often we do take into account the needs of our customers as well.
They want accurate, balanced information, not promotional information – primary publications, randomized placebo-controlled study standard, the gold standard, as you would expect. The usual grading of what is evidence-based – so basically evidence-based medicine. We know what the grading are, what’s the gold standard. So I think if we asked any of our key opinion leaders, they would rather see a primary published big study that’s powered to prove the primary end-point. And robust safety data.

The analysis of the interviews from the pharmaceutical industry supports the validity of the ISCM’s depiction of context, goals, perceptions and motivating and inhibiting factors as key influences on an information provider’s behaviour.

5.1 Finding and Discussion

The content analyses of the pharmaceutical industry interview transcripts provide strong support for the validity of the Information Seeking and Communication Model. Not only do they endorse the relevance of the model to these different types of information provider but they also provide further verification, in addition to the evidence reported in part one of this research of its relevance to physicians as information users. The findings demonstrate that the information behaviour of providers mirrors that of users. They substantiate the fundamental importance of context and related factors in the information behaviour of both providers and users. These affect needs, wants, goals, perceptions and motivating and inhibiting factors, and the resulting information seeking, information assessment and use, communications, decisions and actions.

The findings highlight that pharmaceutical industry as information providers. Companies have a commercial goal: “we want to sell our drugs” (extract F101):.
Pharmaceuticals seek to influence the clinical behaviour of physicians. A pharmaceutical company wants to “drive appropriate uptake” of the company’s medicines (extract B11). The behaviour of pharmaceutical companies is influenced not only by their own commercial environment but also by requirements from the wider environment, notably legislation and the industry’s code of practice: “We in the industry have the ABPI Code, which we must adhere to” (extract N71). “We’re more the servants of the Department of Health I suppose than we are of the doctors and practitioners who use our guidance” (extract R42). Pharmaceutical industry perceives the information that they produce to be credible but they also recognize that physicians’ perceptions may be different. An industry interviewee commented: “I feel it [information from the pharmaceutical industry] is quite credible but I think the external perspective ... when you speak to the healthcare professionals – they feel it’s not as credible because there is this perception that companies are not telling the truth” (extract J71).

The model is not intended to give a detailed representation of every aspect of information behaviour. It does not, for example, describe exactly how a user assesses and processes information or how a provider produces information products. As with other models, the aim of the ISCM is to highlight important elements of the process being modelled and the factors affecting them. It is hoped that by drawing attention to the features of information behaviour it will have practical value in helping users and providers to review and improve how they seek, use and communicate information. By understanding the importance of the utility as well as the credibility of its information products and making them easier to access and use, NICE is improving the way in which it meets health care professionals’ needs. Conversely pharmaceutical
companies recognize the importance of improving their perceived credibility and are changing the way in which they communicate with physicians.

The validity of the ISCM depicts that this research also provides support for the models described. This is a significant new finding because it demonstrates the practical relevance of key elements of these models in environments (health care and the pharmaceutical industry) that are different from those in which most of the models were developed. A further highly important aspect of the research is that the new model has been developed by building on previous work. It thus answers the criticism (Case, 2002; 284; Wilson, 1999) that research in LIS fails to build on existing theory.

In addition, it takes a novel approach in using existing theory not only from library and information science but also from communication studies. As a result, the ISCM is more comprehensive in scope than most other models, covering as it does the information user, information seeking and use, the information provider and communication.
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Appendix
Box 1. Interview guide for pharmaceutical company interviews

1. What is your role and what is your background?

2. From your perspective, what would you say are the main information needs of a doctor in the NHS when considering the use of a medicine?

3. What role does your company play in meeting doctors' information needs?
   • What are your company's aims in providing information for doctors?
   • How far is your company's role in this respect guided by an understanding of doctors' needs for information?

4. Do you distinguish between advertising and promotion on the one hand and information on the other? If so, what is the distinction?

5. Where else or who else do you think it's appropriate for doctors to get information from with regard to medicines?

6. How do you view information provided to doctors by NICE, compared with that provided by the pharmaceutical industry?

7. What criteria do you think can be used to judge the credibility of information?
   • Is some drug-related information more credible than other information?
   • If yes: What makes it more credible in your view?

8. How credible is information provided by the pharmaceutical industry?
   • Does it have any particular bias?

9. How does the credibility of information provided by pharmaceutical companies compare with that provided by NICE?

10. Do you think that the pharmaceutical industry can improve the way in which it communicates with doctors?

11. Do you think that NICE can improve the way in which it communicates with doctors?

12. Do you have any other comments or observations concerning any of the topics we have discussed?

Prompt: What is your and your company's perspective on evidence-based medicine? What is the place of information from the pharmaceutical industry in today's environment of evidence-based practice and evidence-based medicine?