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Information, The Decision-Making Traffic Jam Of the 21st Century: A Management Perspective

Increasingly, the value of a business today is measured in terms of what it knows, rather than what it owns. Even so, whilst knowledge exists in most organisations it is regularly difficult to access. This paper addresses the question of whether - now that we exist in the much heralded 'information era' - the information needs of those engaged in management are being satisfied. With interest in the Internet, as a global communications medium burgeoning, we now understand how things might be in the future concerning the sheer volume of information available to the decision taker. However, a question remains as to whether this information is collected and presented in a form - at a level of specificity and depth - that makes for better decision taking. In this paper, the authors argue that there are seven issues that need addressing in order to ensure that the information needs of management are being satisfied.

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The Explosion in Information

Increasingly, the value of a business today is measured in terms of what it knows, rather than what it owns. Even so, whilst knowledge exists in most organisations it is regularly difficult to access. This paper views those organisational structures that keep market and competitive intelligence apart from traditional forms of data collection - market research - are largely unhelpful. All too often knowledge is stored in any number of ways around an organisation from database files right through to sales presentations. However, a further question remains as to when this information is collected and presented, is it in a form - at a level of specificity and depth - that makes for better marketing decision taking (Antoniou, 1997)? It would appear that the printed monthly management bulletin (or its electronic offspring) which seeks to draw much of this knowledge together is in need of a complete overhaul. It is simply too slow and too inflexible to meet the needs of the decision taker.

If the goal of knowledge from, and about the market, is to help the decision taker make more informed decisions, then it is imperative that they work with an integrated picture of what is happening, rather than the piecemeal approach still evident in many large and small firms alike. In this paper, the authors argue that there are seven issues that need addressing in order to ensure that the information needs of management are being satisfied.

1. Piecing Together The Information Jigsaw

In order to take advantage of a company's most valuable asset and compete effectively decision takers will need efficient means of rapidly accessing and sharing knowledge, however there is no escaping the frequently articulated observation that organisations remain ‘data rich, yet insight poor’. Numerous studies on the subject of management information highlight concerns about decision takers suffering from ‘analysis paralysis’ and ‘information overload' (Smith and Fletcher, 1999). For example, a survey of business managers highlighted that whilst 25% of managers require an enormous amount of information for their job, 49% felt they are often unable to cope with the volume of information they receive. The study also revealed that 38% claimed that a substantial amount of time was wasted trying to locate necessary information. Worryingly, 94% do not believe that the situation will improve (Waddington, 1996).

So in a world bombarded with different sources of information, the question must be asked as to whether those responsible for collecting, synthesizing and presenting such information are providing a service which actually helps the decision taker. Are there people who can assemble the ‘information jigsaw’ of available evidence into a sensible, meaningful picture? Here we have in mind, of course, information and market intelligence specialists working in the external market and management consulting industries (referred to throughout as, *intelligence providers*). There are, of course, those who have remained in a tight technique or methodologically orientated straightjacket. Nevertheless, certain providers have recently made considerable progress in ensuring that they operate in a more eclectic way than in the past. Drawing on, and piecing together, evidence from large-scale surveys they also feel comfortable in presenting desk and secondary data - all spiced with qualitative insights. Moreover, adding to all this, they show a willingness to accommodate available information from the burgeoning number of customer and other databases (Duan, 1997).

Increasingly, such 'knowledge management' professionals are becoming aware that the processing of information to aid the decision making process rests on two fundamental principles. The first is *the panorama principle*. It is necessary to recognise that, in essence, *all* data are qualitative in the sense that they need to be interpreted in context, with the full appreciation of where the data came from, its strengths and its weaknesses. And second, there is the *triangulation principle*. Enlightened professionals recognise that data brought together from several sources are likely to provide a more reliable guide for decision taking than data presented in a piecemeal fashion (Duan 1997a). However, this is obviously not common practice. In the Reuters study (Waddington, 1996), factors such as the holding of files in different software formats and the speed of the internet at critical times of day remains a major problem. For example, 43% of respondents thought that decisions were delayed and otherwise adversely affected by the existence of too much fragmented information; 47% of respondents said that information collection distracts them from their main responsibilities. They find it difficult to develop strategies for dealing with the information they retrieve. What, the authors ask, would be the potential increase in productivity if all these distractions were removed?

2. Recognising Management Parameters

Given the plethora of information now available (Garrick, 1996), it is increasingly important that evidence presented to the decision taker is kept to a manageable proportion. Specifically, it is important for intelligence providers to have a disciplined approach - an analytical framework - in which they operate, from the outset of the project. People can no longer develop effective personal strategies for managing information. Faced with an onslaught of information and information channels, they have become unable to develop simple routines for managing information.

The old adage that a problem well defined is a problem half solved remains as true now as it ever did. Thus at the outset of a project or market study, it becomes critical to clearly define, the information needs and to predict exactly how this will help the decision taker. Particularly important here is sorting out how different individuals at the initial project briefing stage will present the problem. Some will come at the problem by listing possible survey questions (how would you describe the bank's counter service?). In contrast, others may elect to communicate the problem in terms of research objectives (what is the customer's overall level of satisfaction with the standard of counter service?); whereas others pose the problem in terms of decision outcomes. For example, we must be in a position to decide:

(i) whether to maintain call centre standards at existing levels, or
(ii) allocate additional resources to extend the range of services on offer.

The skilled intelligence provider will be alert to the different ways in which the problem may be initially expressed and, using all these different 'languages of problem definition', will work towards the design of a project or study that is manageable. If the provider is allowed just one question at the outset of the study it should be, 'on completion of this project, what question(s) do you expect to be able to use this research information to answer?'(Tammo, 1996).

3. Managing Expectations

Today's senior Managers may be in a post for a comparatively short period (Mercer, 1996). It is often joked that the value in much of a business today gets up and goes home for the weekend on a Friday afternoon. In many industries it is increasingly common for managers to stay in a company for only one or two years before moving on. Traditionally, their knowledge and experience goes with them. A recent survey in Marketing (a UK trade journal), suggested that seventeen months is the average for senior Marketing Managers. It therefore becomes important for the Manager, during their time at a particular helm, to concentrate on what is achievable. Of course, the idea that there can be a clash between the individual goals of an employee and the goals of the organisation is hardly a new observation. But the authors would argue that the time pressures placed on a senior/middle manager in recent years have brought this issue into sharp profile. Thus, an individual - knowing that they must produce results in the short term to keep a career on line - understandably tend to associate themselves with projects and tasks that are achievable within reasonable time-frames (Saunders, 1996). There is less interest in projects with wider and longer-term pay-offs. This emphasis means that when, for example, Marketing Managers are listening to market research presentations, they often become irritated and frustrated if some of the issues that are being addressed are not cast within what we have termed as 'the achievable zone'.

4. Make It So Number One

The information managers receive in order to make decisions not only has to be in the achievable zone, but also be possible. Here it is important for the intelligence providers to recognise the importance of providing information at the level of specificity now required by management about to decide what to do when faced with different types of evidence (McDonald, 1996).

An example from the UK illustrates the point. At a recent Market Research Society Conference, reference was made to a cable company's customer satisfaction survey, which reported dissatisfaction among customers on the 'standard of the engineer's visit'. The client dismissed the feedback as too general and insufficiently specific to be actionable. This led to identification of the fact that the specific problem was the creation of dust caused by the engineers drilling through the outside wall of customers' houses in order to insert the cable. This specific information led to direct specific action being taken in the form of providing the cable company's engineers with hand-held vacuum cleaners so that they could hoover up the dust when they had completed their installation (Smith, 1997).

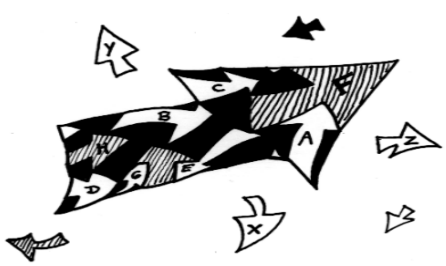
5. SEEING IS BELIEVING

We now examine the way in which the decision taker scrutinizes the voracity of the 'package of evidence' which they are invited to inspect prior to taking a decision. Much has changed in the 'hot house' climate of the modern business world in recent years. Today it is no good the intelligence provider falling back on the textbook concepts of validity and reliability in trying to explain the robustness of their market reports. The provider must be prepared - whether they like it or not - to ensure that their evidence is seen by the decision taker as believable. In some ways this, of course, seems irrational. A report that a decision-maker finds 'hard to believe' is, of course, not necessarily false or misleading.

However, the counter argument is that believability is all that the modern decision taker can fall back on given the complexity of the eclectic mixture of information they are now asked to inspect (Johnson and Mathews, 1997). Increasingly, no one item of evidence is likely to be susceptible to assessment via 'classic' tests of say, statistical significance. Therefore, given the limitations of classical, statistical interpretations of evidence, what can the decision taker do? Not surprisingly they will inspect the evidence they are shown in the context of ‘prior knowledge’ - just how well do the arguments and evidence being presented square with their own experience? The methodological purist will, of course, continue to baulk at the above observation. But the authors here argue that it is important to accept the way in which evidence is regularly evaluated against this ‘believability’ criterion. However, it is argued that ‘believability’ does have a methodological basis. For example, the whole notion of ‘grounded theory’ (Strauss and Corbin, 1990; Martin and Turner, 1986) centres on inspecting each piece of primary research evidence, in relation to what other information we have on that topic.

To see whether this fresh information adds to our theoretical understanding of the topic under investigation. The point at which we no longer improve our theoretical or conceptual knowledge of a topic is called by the grounded theorists the point of ‘theoretical sampling saturation’ - the point at which we should stop collecting new data. In a different context we have writers now discussing the notion of directional indicators as a way of replacing the more classic concepts of pure statistical validity and reliability.

Here we are referring to the way in which the analyst will look at the direction indicated by evidence drawn from a number of different desk, qualitative and quantitative sources (**fig. 1**) in order to arrive at its overall directional indication (rather than falling back on formal tests of statistical significance).



6. TAKING THE PLUNGE

fig. 1: The truth is out there

Gone are the days when management would be satisfied with feedback from their intelligence provider that painted a general overview about the topic under investigation. Information presented to the decision taker must be directly for them. This reflects the fact that today's decision-makers are, quite reasonably, more accountable for their actions and decisions than was the case in the past. In a modern business environment there is enormous emphasis on measuring exactly what benefits flow from what action (Devlin, 1998; Myung-Sul, 1997). In this setting the pressure is, in turn, on the information provider to present data in a more participative style. Thus, the decision taker is looking for the provider to identify, for example, the three key issues that underpin the whole study, and for the evidence to be presented in such a way that it helps them decide how to interpret each of these three issues (Grönroos, 1998; Shaw, 1998).

This is to be contrasted to presentations -especially given by market researchers in the past - where what may be termed the *dipping of one's toe in the water* approach to a presentation is pursued. This would involve first presenting a body of evidence from desk research, followed by a body of qualitative, then quantitative evidence, and so on. At the end of this *toe dipping* process, there would often be a big gap between this evidence and the decisions still to be taken by management. Nevertheless, today the emphasis is on the 'participative' style that relentlessly works its way through to the conclusion the decision-maker must make. There is probably still some way to go for the market researcher to perfect this participant art form, but it is generally recognised that the knowledge management professional seems to be getting there. They are reducing the gap that has so often existed between the data and the decision.

6. Me? I'm Helping Put A Man On The Moon

Today, the expectation is that all market intelligence data will be set in the wider marketing context. Reasonably enough, today's decision takers will be dissatisfied by a pedestrian and literal presentation of the evidence, without any attempt to link it to wider, contextual issues. Moreover, there is a growing expectation that the intelligence provider will go beyond the immediate evidence and will be able to develop a model or framework that allows a decision taker to generalize from the specific evidence and start understanding some of the wider, overarching trends and forces at work (Elkin, 1997). Thus today, the pressure is on the intelligence provider to identify the shapes and patterns that lie behind the data. Those in the information industry - including market researchers - are extending their range in order to be able to provide clients with these 'pattern identifying skills'. For example the authors have recently conducted research on attitudes towards government funded information services (call centres and on-line). In this study the authors' were able to go beyond a traditional report stating how managers felt about the different service providers in the market. The conclusions began to explain what, in general terms, seemed to be happening in terms of how managers (in this instance high growth small firms) responded to the availability of such provision, and their possible take-up rate.

On this study we realised it was well documented that with regard to new service technology, there is normally an 'early adopter group' who are first in to the new forms of offer, and at the other end of spectrum, a group of 'technophobes' who feel uneasy about embracing anything new. In between there are often businesses that will keep a watching brief - neither committing to, nor rejecting, the new offer. Given this often large, 'watching brief' category, good practice dictates that we should unpack this mindset, rather than simply accept it. For instance, we know that certain individuals' attitude towards a phenomenon, such as the Internet will, in part, be a function of his/her own individual beliefs and attitudes, but will also be the function of the individual's perception of what they think others think about the Internet. In the light of this insight, we can start unpacking this 'watching brief' category by exploring the wider context of respondents' perceptions of what others currently think and may be about to do. For instance, one could start exploring the extent to which an individual's willingness to embrace say, electronic on-line information services would be changed - triggered - by external events, such as learning that a key competitor was now on-line and putting their own business at a competitive disadvantage. By providing a model that explained this 'watching brief' category, we were able to provide the decision taker with insights that will enable them to interpret similar market opportunities.

7. A Gut Feeling Doesn't Always Indicate The Onset Of An Ulcer

The authors argue that in this new information era, rather than intelligence providers simply presenting data, they should now provide an interpretation that has taken into consideration the perspective of the decision taker. We argue that it is good practice to start including in the data analysis and interpretation process some mechanism for 'factoring in' current management intuition and thinking on the topic under investigation. The argument is that by including - in some interactive way - this 'prior knowledge' we will be able to improve the quality of the final interpretation of the data. This may sound like heresy to the classic researcher/analyst who wants to keep clear blue water between the interpretation of the evidence and decision taking process. However, we would argue that in the new information and business climate, we should be realistic about the importance of taking management intuition more formally into account (Grönroos, 1994). In some ways, we already have the methodological framework in place to start this process. The Bayesian approach to decision-making (Akker, Kumar & Day, 1995) provides a useful way of structuring our thoughts in this area. It is sometimes argued that the trading off of 'prior' and 'posterior' probabilities, that is central to the Bayesian approach is, in effect, nullified when the prior probabilities are management hunches and intuitions, and the posterior probability is survey or market data. The greater robustness and certainty of survey data, it is argued, swamps the probability of prior beliefs, which either add or detract very little from the probability of survey findings. But this view overlooks the important distinction between 'implicit' and 'explicit' knowledge. Clients' intuitions may be steeped in implicit knowledge - everything from the body language of the last customer spoken to, to the market trends revealed in long time-series of research data. In short, the host of hard and soft facts digested by clients in their day-to-day work (Culkin and Cox, 1997).

In the understanding of a particular subject, we can identify a form of Pareto distribution, whereby an individual can come to understand 80% of a subject within 20% of the time, which it takes to entirely master that subject. However, the remaining 20% (often crucial understanding for effective practical action in the area), requires the remaining 80% of the time to master it. This knowledge curve, often difficult to articulate explicitly, could include facts, which genuinely challenge the explicit findings of market intelligence data. So what is required is a method for identifying and drawing out the precise, implicit client intuitions, in order to place them in the Bayesian balance, against explicit research findings. In pursuing this dimension of the analysis process, there are four key 'prior knowledge' areas to take into account. Each is described below.

- **Normative research experience:** in many situations the commissioning organisation will have a body of normative evidence against which to evaluate specific survey findings. For example, it is well known that a number of leading FMCG manufacturers know, from long experience, that if they have a survey finding suggesting that 30% of customers will definitely buy a particular product, then only a third of this 'top box' figure will actually buy the product. Therefore it is useful to factor in this normative understanding when interpreting the data.

- **Near experiences:** it also seems sensible to build into the analysis the experience of the company in similar ventures in related fields. For example, in researching take up of a particular on-line service aimed at 'higher education institutions', it would be imprudent to ignore the success the organization has earlier achieved in marketing a publication to 'further education institutions'.

- **Anecdotes vs. archetypes:** market intelligence providers have traditionally been 'rather sniffy' about the tendency of Senior Managers and Board Members to whom they present, to be driven in their understanding of a subject, by anecdotes about apparently isolated incidents. But such scenarios may represent genuine insights into a subject. Such instances are not mere anecdotes, but rather archetypes: instances, which are highly representative of a widely occurring fact or phenomenon. Many marketing rule of thumbs are of precisely this sort - for example, psychological pricing - that is, the widespread tendency for people to think that £49.99 is a far cheaper price than, say, £50.60.

- **Likely competitive response:** although as explained above, a good market research study will attempt to understand the competitive context in which a respondent is offering their views, there will still be an advantage to building into the interpretation process the client's assessment of the likely response of competitors to a particular initiative. If management think that a key competitor will start a price war in response to their new pricing strategy, then - arguably - this view should be factored into the analysis process (Dexter and Fletcher, 1999).

Conclusions

Increasingly, companies are moving towards flatter organisational structures that eliminate intermediate layers of management. As a result, decision taking has become more decentralised. Whilst in 1990, a large company may have had a small number of decision takers, in 2000 that same company will have many more with the number growing. A flatter organisational structure does not simply mean devolving responsibility - it should be about empowering everyone in the company. With such a structure, people require access to information needed to enable them to make effective decisions.

The authors would argue that the market intelligence professional - if they are to provide a service to management decision takers - must anticipate the fact that management will be moving to a position, possibly in presenting a business case, where they will need to use the evidence being presented to 'win' a particular argument. It could of course, be argued that this does not fall within the remit of the provider of the information. But we would take the counter view, arguing that we are moving into an era where individuals' ability to absorb information in any depth is becoming severely tested. According to this view, we will simply become a nation of zappers, clicking from one 'top line' piece of information to the next, in search of some superficial, 'apparent' solution to our particular problem. We can already see the signs. Radio and TV programmes want answers to be provided in 30 seconds; politicians and business people are forced to accommodate their wishes by providing top line soundbites on issues, rather than detailed evidence. Therefore, new generations of individuals grow up with this as the accepted way of trying to make sense of the world.

Looking to the future, as we enter a world with increasingly online information databases, the authors would argue that many of the issues raised above will come into even sharper focus. We envisage increasing calls for information from different sources to be pieced together and that in the face of an overwhelming amount of information, there will be more emphasis on concentrating on what is achievable, and also making sure that the outcomes are entirely actionable. There is also likely to be increasing demand amongst research audiences for assurance about the believability of the data that has been assembled.

We believe there is also going to be a competitive advantage to those market research and information providers who, at the outset of studies, can help define the problem in a manageable way. Whilst at the end of the study helping the decision taker through the decision making process. This is done in part, by listening carefully and factoring in the manager’s own intuition and prior knowledge on the subject, and also by helping set the information in a wider analytical framework context, together with helping the decision taker present and win the case in the arena in which the argument must be presented.

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