Suggestion Schemes as Information and Knowledge Management Systems

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Abstract

Suggestion schemes are becoming increasingly popular in organisations in the UK and elsewhere, but they are not normally studied from the viewpoint of information systems. This paper seeks to make good the omission. After briefly reviewing the nature and status of suggestion schemes, the paper describes fieldwork that has investigated both private sector and public sector suggestion schemes and implemented an experimental scheme. The evidence of the fieldwork is analysed to reveal the organisational structure of suggestion schemes and their use of automation. The role of suggestion schemes in relation to various types of knowledge and idealised forms of organisation is examined. The purpose of this analysis is partly to improve understanding of suggestion schemes, and partly to show how they can contribute to knowledge management and communication within organisations. The paper concludes by identifying ways in which an understanding of suggestion schemes can contribute to the design of large-scale knowledge management systems.

1 INTRODUCTION

Suggestion schemes have a long history, yet they scarcely figure in the panoply of information systems literature. Instead, they have been seen as an aspect of human resource management, with the main emphasis being on how they can motivate employees and contribute to the management of change. Highly developed suggestion schemes typically aim to collect ideas from operational-level employees in order to improve standardised procedures and raise quality. By contrast, much of the work on knowledge management within organisations has concentrated on technology as a facilitator in the collection, dissemination and interpretation of the information used by knowledge workers (Smith et al, 2001).

A recent study of innovation in UK organisations found that the degree of success of major innovations was greater in organisations that captured more ideas from non-management employees and gave greater feedback to employees about their ideas (Leach et al, 2001). A survey carried out by the Confederation of British Industry in 2000 showed that approaching 40% of companies studied claimed to have formal process for monitoring and evaluating innovation but that only 15% were using IT to keep track of ideas (CBI, 2001). This suggests that the time is ripe for the study of the benefits that organisations can derive from computer-based systems, such as suggestion schemes, that can be used to harvest, disseminate and interpret knowledge from operational-level staff.

The fieldwork reported on in this paper involved a series of extended interviews with suggestion schemes managers in a range of private and public enterprises. The schemes studied varied widely, both in organisation and in the degree to which they were automated. An analysis, from an information systems standpoint, of the information gathered shows how both organisational and technical aspects of the design of a suggestion scheme can affect their effectiveness.

The paper starts by establishing the significance and status of suggestion schemes and then provides some details of the fieldwork. It then discusses how the schemes can support knowledge management and communication within organisations.

2 SUGGESTION SCHEMES

The concept of a suggestion scheme is simple. Dunn and Lloyd (1997) offer the definition, 'A suggestion scheme is a formal mechanism, which encourages employees to contribute constructive ideas for improving their organisation'. In its simplest form, a suggestion scheme will elicit suggestions from employees, classify them, and dispatch them to 'experts' for evaluation. After this, the suggestion might be adopted, in which case the suggester may well be rewarded. But even if a suggestion is rejected, the suggester may still be rewarded with a token gift.

Suggestion schemes have a considerable history in Europe, America and Asia that has been commented on by several authors, (Lloyd, 1999; Schroeder and Robinson, 1991; Smith, 1989; Spahl, 1990). Individual schemes have been in existence for over 60 years, (IRS Employment Trends, 1996), and there is evidence that the popularity of schemes has been increasing. A recent survey in the UK found that half the respondents had schemes that had been in existence less than 10 years, (IRS Employment Trends, 1996), and several national organisations have been created to support suggestion schemes. In Germany, the Deutsche Institut fuer Betriebswirtschaft organises conferences and provides consultancy in suggestion schemes; and 441 member organisations responded to a survey of suggestion schemes which took place in 2000. This was 80 more than had responded in 1997, (DiB 2000). In the UK, similar services are provided by a dedicated organisation called IdeasUK, (IdeasUK, 2001). This was founded in 1987 and now has 175 members. In the USA, a national body, the Employee Involvement Association, originally called the National Association of Suggestion Schemes, is reported to have 1,000 members, (Smith 1989).

Both the public and the business sectors of the economy have adopted suggestion schemes. For the business sector, the motives include the desire to: increase profits, reduce costs, increase safety, enhance staff morale, and improve staff retention (IdeasUK, 2001). For public sector organisations, there has been an expression of enthusiasm for suggestion schemes by the UK Government as a means of improving responsiveness to the public, and as means of facilitating innovation and service improvements (Cabinet Office 1999a, 1999b). Both in the business sector and in the public sector, suggestion schemes normally offer financial incentives and this is specifically encouraged in the public sector (IRS Employment Review, 1996; Cabinet Office, 1999c).

3 SUGGESTION SCHEMES, KNOWLEDGE MANAGEMENT AND COMMUNICATION

3.1 Types of knowledge

Suggestion schemes long predate the concept of knowledge management and consideration of the importance of upward communication within organisations. Nevertheless, they can perform these functions effectively, to the benefit of the host organisation. An examination of the types of knowledge collected by suggestion schemes can thus help a company that is seeking to develop a knowledge management strategy.

The concept that knowledge can be categorised separately from 'the knowledgeable' underpins work in expert systems and knowledge management. Further, it enables knowledge to be subject to the simple binary classification of "explicit" as opposed to 'tacit' (Lam, 2000), though Nonaka and Takeuchi (1995) have pointed out that the two forms are not separate and discrete in practice. Suggestion schemes initially capture explicit knowledge in the form of ideas written on paper or submitted via email, though the ongoing involvement of suggesters in the evaluation and implementation of their suggestions should facilitate the transfer of some implicit knowledge as well. A second categorisation of knowledge can be based on a distinction between knowledge as an attribute of an individual and knowledge as an attribute of an organisation. The former is unproblematic, corresponding as it does to the common sense notion of knowledge. The latter, which is perhaps something of a metaphor, is a widely accepted concept that corresponds to the shared knowledge that persists independently of any individual within an organisation, (Walsh and Ungson, 1991; Nonaka, 1994). By definition, suggestion schemes involve communication by an individual within an organisation. Though the beneficiary is always the organisation, a suggestion may involve a transfer of knowledge either to the organisation, as a collective entity, or to individuals within the organisation.

3.2 Knowledge and organisations

Following the work of Lam (2000), the combination of the two systems of categorisation gives rise to distinctions being made between:

- **embrained** - individual explicit knowledge that is formal, abstract or theoretical;
- **embodied** - individual tacit knowledge, usually practical and action oriented;

- **embedded** - collective tacit knowledge, which is the collective form of tacit knowledge residing in organisational routines and shared norms;
- **encoded** - collective explicit knowledge, which is knowledge that has been codified and stored in blueprints, recipes, written rules and procedures.

The character of organisations can be considered to be dependent on the types of knowledge that they predominantly exploit. Again following Lam's adaptation of earlier work, four "ideal" forms of organisation can be identified.

These are the:

- 'Professional Bureaucracy' which relies on the skills and knowledge of its professional employees, and which predominantly exploits embrained knowledge;
- 'Operating Adhocracy', in which there is little formalisation of behaviour and a tendency to form project teams, and which predominantly exploits embodied knowledge;
- 'Machine Bureaucracy' in which most work is simple and repetitive, and which predominantly exploits encoded knowledge; and the
- 'J-firm', predominantly exploiting embedded knowledge, which derives its capability from knowledge that is embedded in its operating routines and shared culture.

This information is summarised in Table 1.

Organisation	Dominant form	Knowledge
Professional Bureaucracy	Embrained	Individual - explicit
Operating Adhocracy	Enbodied	Individual - tacit
Machine Bureaucracy	Encoded	Collective - explicit
J-firm	Embedded	Collective - tacit

Table 1: Organisations characterised by the dominant form of knowledge, based on Lam, (2000).

No operational procedure is advanced for determining the 'dominant form of knowledge' in an organisation. In a university, which is Mintzberg's example of a professional bureaucracy, it will normally be easy to identify subsections that would have much in common with a hotel; and a hotel is Mintzberg's example of a machine bureaucracy. While real organisations are a mixture of several of these ideal forms, it is nevertheless useful to consider how suggestion schemes might operate in each of them.

Within a professional bureaucracy, a suggestion scheme could convey suggestions containing explicit knowledge to individual professionals. Such a scheme would have to overcome the difficulties of classifying suggestions and matching them to the interests of appropriate professional staff. The current awareness schemes, often run by librarians in research laboratories, provide a service that surmounts the problems that would face a suggestion scheme. The character of a suggestion scheme in an operating adhocracy would be one that conveyed tacit knowledge between individuals against a fluid organisational background. The quality judgements in an operating adhocracy are dependent on "the market", so that the evaluation of suggestions will depend on authority based on market success. The characteristics of tacit knowledge mean that suggestions are likely to be indirect, dealing not with the solution of a problem, but rather with some factor in the environment of a problem. It would be related to an approach to knowledge management that focuses on the task of indexing individual skills and abilities and providing mechanisms and opportunities for knowledge sharing (Scarbrough, 1999).

In contrast to the fluid structure of the operating adhocracy, the machine bureaucracy is characterised by a fixed organisation that governs its actions by exploiting encoded knowledge. A suggestion scheme in this context could be expected to be orientated to providing explicit knowledge that would add to, or modify, the encoded knowledge of an organisation. The knowledge contributed in suggestions is not expected to be of a professional nature, and may well be described as commonsense reflection on the operating procedures of an organisation. The idealised J-firm does not provide a hospitable setting for suggestion schemes, for in this form of organisation the suggestion scheme should be providing tacit knowledge to some collective entity able to distribute knowledge. It is far more the realm of the typical knowledge management system.

4 SUGGESTION SCHEMES IN USE

The empirical data that informs this research was collected from the member organisations of IdeasUK. An analysis by industrial sector of the 175 member organisations is presented in Table 2.

Sector	%
Communications	2
Financial	19

Retail	3
Manufacturing	24
Government	13
Police Forces	12
Service Industry	10
Utilities	9
Education and Others	9

Table 2: The membership of Ideas UK analysed by industrial sector (IdeasUK, 2001)

It has been possible to interview staff and collect information from companies in the Financial, Manufacturing, Government, Police Force and Utilities sectors. These are listed in Table 3. It has also been possible to draw upon experience derived from an experimental suggestion scheme run at the University of Kent during two months of the year 2000. All the organisations employ a workforce of a size that presents a coordination problem that deserves serious consideration.

Organisations	**Employees**
Private Sector Utility	4,000
Credit Card	4,500
Building Society1	3,800
Building Society2	15,000
Health Services	44,000
Public Sector	
Government Agency	4,500
Police Force	11,000

Table 3: The nature and size of the case study organisations

The main research instruments were face-to-face semi-structured interviews, varying in length between two to five hours, depending on the time allocated by the individual organisations. Unfortunately, the variable length of the interviews affected the amount of information that could be obtained about each organisation because time was limited. In two case studies where the interviews only lasted two hours, topics covering organisational background and structure had to be neglected. In every case, the informants were suggestion scheme managers who had worked for their organisations for eleven and thirty years. As a result, they were able to provide both detailed knowledge and experience about suggestion schemes and a unique insight into the organisational context in which they operated. It is important to emphasise at this point that the analysis of the case studies is based on the responses of suggestion scheme managers who through their invested interests could possibly hold a bias in favour of such schemes. However, no attempt has been made to analyse this possible bias. The topics covered during the interviews included

- organisation of the scheme, (rationale, and degree of centralisation),
- administration of the scheme, (scheme managers/administrators, evaluators, implementing managers, and awards),
- details of ways in which suggestions were processed, (preliminary research, submitting ideas, evaluation, implementation rejection, further investigation, appeals and average clearance – process cycle time).

Because the study was designed to investigate suggestion schemes as examples of information systems, rather than as knowledge management systems, there were no specific questions on knowledge management issues. It was only at the analysis stage that the significance of this aspect of the schemes became obvious.

5 THE ORGANISATIONAL STRUCTURE OF SUGGESTION SCHEMES

The organisations studied had run suggestion schemes for varying periods of time, from a few months to over a decade. A feature of all the schemes was that they were constantly evolving in line with their organisations' objectives and this vitality was essential to their success. It could take the form of a complete makeover or

regular publicity for the scheme throughout the workforce, perhaps as focussed campaigns. Without such promotion participation went into steady decline and the scheme stagnated.

It is important for the success of a suggestion scheme that it is credible with the workforce, and this means that it should be sponsored at the highest level. The majority of the schemes studied reported directly to Chief Executive level. In terms of structure, the schemes varied widely, depending on the needs and priorities of each organisation. The majority were managed centrally, though possibly with some devolution of decision making to departmental levels. Two were highly devolved, one (in the credit card company) to overcome the bureaucracy and poor response times previously exhibited by the scheme and one to mirror the decentralised organisational structure of the multinational health services organisation operating it. The credit card company scheme's attempt to improve credibility by cutting down on central procedures led to fragmentation, with differing reward levels from one department to another and a lack of communication on issues relating to its overall operation. This had an adverse impact on the credibility of the scheme with the workforce. By contrast, the health services organisation's decentralised scheme addressed the diversity and local idiosyncrasies of its various business units by having local co-ordinators responsible for promoting and facilitating the scheme within a centrally determined framework of regulations. Because this mirrored the corporate structure, it avoided the problems of devolution experienced in the credit card company.

All the suggestion schemes studied had comparable support systems involving scheme administrators, evaluators, implementing managers and awards panels. These groups can be seen as carrying out the following idealised roles

- **Scheme administrators** are responsible for processing suggestions and for the overall administration of the scheme. They delegate suggestions to evaluators and facilitate communication between all scheme participants. A vital part of their job is to provide feedback to suggesters and keep them up-to-date on the progress of their ideas.
- **Evaluators** are individuals within the organisation with the necessary specialist knowledge to assess the merits of suggestions, taking into account their potential benefits for the company and the resources necessary for their implementation. This involves them in working actively with the suggester.
- **Awards Panels** are responsible for the overall strategic development of the scheme, final approval of evaluations, suggestion implementation and the level of awards. They are generally designed to represent the diversity of the organisation and thus typically included clerical staff as well as managers. In the two decentralised schemes, awards were determined at local level rather than by a central awards panel.
- **Implementing managers** are actively involved in the decision-making process in some organisations. These are the people who will be responsible for implementing the suggestion if it is to be adopted.

All suggestion schemes operate the same fundamental business processes. The initial stage in putting forward a suggestion is preliminary research. Where the information is readily available to them, employees are encouraged to review previous suggestions for guidance and to eliminate duplicates. This leads to the submission of a description of an existing problem, a detailed account of the proposed solution and a list of potential benefits to the company. Most organisations stress that suggestions should ideally be submitted through the natural hierarchy of the organisation. However, in the experience of scheme administrators, line managers are prone to manipulate or even block ideas, so the only safe way to submit suggestions is directly to the scheme administrators.

Once received, suggestions are logged and screened to remove duplicate and 'out of scope' suggestions. If an idea is accepted, the suggester receives a reference number and, usually, an encouragement award. Accepted suggestions go to a suitable evaluator who then supplies the scheme administrator with an assessment of its benefits and feasibility. Successful suggestions earn a reward for the suggester and are passed to an implementing manager for further work. In some schemes the suggester is actively involved in all these stages, thus improving transparency and the suggester's sense of ownership of the idea. If a suggestion is rejected, the suggester receives a full explanation. There may also be encouragement to resubmit the idea in a different or more developed form.

Scheme administrators interviewed emphasised that the speed of response and average clearance time for suggestions were crucial to the success of suggestion schemes. Organisations where response times were long and final decisions were delayed through inadequate suggestion scheme software, lack of evaluators or complicated administrative procedures, tended to experience a noticeable decline in participation.

6 AUTOMATION OF SUGGESTION SCHEMES

The organisations studied all supported their suggestion schemes with database systems. These varied from simple Access databases to sophisticated software packages, incorporating workflow principles and with web-based user interfaces. The latter provide organisations with the capability to integrate the administrative and communication processes required to run their schemes. Despite the commercial availability of such software, fewer than half the enterprises studied had fully automated schemes. The databases typically provided facilities to search for suggestions by title, reference number or through text search; the ability to track the progress of suggestions; and the generation of letters and statistical reports. In addition, the more sophisticated systems also allowed automatic registration of suggestions, flagging of overdue evaluations and automatic electronic communication. At the time of the study, the number of commercial software packages supporting suggestion schemes were limited, and only one was represented in the studied organisations. Suggestion scheme modules are now being built into integrated packages such as SAP, which may improve the level of automated support within organisations.

Where schemes were only partially automated, the scheme administrators were the only people with access to the database. Suggesters had to submit their ideas on paper or via email or, in one case, by telephone. This made the administration process more labour intensive and time consuming, because each suggestion typically generates multiple messages to and from evaluators, awards panels, managing implementers and the suggesters themselves. This could hamper the scheme in two ways. Firstly, delays in providing feedback to suggesters reduced the credibility of the scheme with resulting declines in participation, and secondly, extra effort was needed to raise awareness of the scheme through internal online news pages or the house journal.

The fully automated schemes provided online access to suggesters, evaluators and scheme administrators, and much of the communication, such as acknowledgements to suggesters and reminders about overdue evaluations was automatically triggered. The advantages of fully automated schemes, as perceived by scheme managers, included a significant increase in participation resulting from online submission, enhanced transparency because suggesters were able to check, query and track the progress of their suggestions, and reduced cycle time because scheme administration was less labour intensive and therefore less time consuming.

For some of the surveyed organisations, a fully automated scheme did not fit its working practices. For example, the police force scheme manager emphasised that online suggestion submission would effectively exclude officers who worked patrolling the streets, rather than in offices. For other organisations, full automation was not seen as an option because there was no corporate intranet and only a small minority of employees had access to email facilities. This was the case in one of the Building Societies studied; by contrast the other Building Society had a highly developed and fully automated system that had been developed in house.

7 SUGGESTION SCHEMES AS TOOLS FOR KNOWLEDGE MANAGEMENT AND COMMUNICATION

7.1 Knowledge and Suggestion Schemes

The companies investigated were primarily machine bureaucracies, though the police force and medical services companies had elements of professional bureaucracy. It was therefore not surprising that the ideas handled by their suggestion schemes were explicit, non-professional suggestions mainly targeted at improving and refining the encoded knowledge of the organisation that governed working procedures. Amongst those attracted were suggestions recommending modifications to the design of forms, suggestions for automating clerical activities and a suggestion to set up a web based service to clarify the procedures surrounding internal promotion. In a non-clerical setting, employees suggested the use of sheep to control the growth of vegetation around electrical installations.

A significant feature of suggestions is that they are often based on either an intimate knowledge of detailed procedures or of the reactions of customers to an organisation's behaviour. Neither of these experiences is automatically available to those within the machine bureaucracy who have the task of encoding the organisation's knowledge into work procedures. Neither, on the other hand, do the greater body of employees in machine bureaucracies have the flexibility in their job descriptions that would enable them to improve their work processes with out some appeal to a higher authority. The suggestion schemes studied were run by enterprises that were convinced that it was people at the 'sharp end' who were best placed to identify problems and suggest improvements. Some of the organisations deliberately used their suggestion schemes to harvest the creativity arising from this knowledge. Scheme administrators also saw their schemes as facilitating the sharing of best practice. This was particularly possible where a fully automated scheme gave employees access to past suggestions and enabled them to contact their suggesters.

Although scheme administrators could see the potential for secondary analysis of the database of suggestions to identify, for example, common features in suggestions or areas of the organisation that needed more encouragement to be innovative, the organisations they represented made relatively little attempt to use the suggestions in this way.

7.2 Suggestion Schemes as Communication Channels

As a channel for both corrective and innovatory suggestions arising from the employees in the operating core of an organisation, a suggestion scheme is fulfilling its explicit role as a knowledge management tool. But in performing this function, a scheme can be considered as giving a 'voice' to employees. The concept of voice is defined by Bishop and Levine, (1999) as:

> 'Any attempt at all to change, rather than to escape from, an objectional state of affairs, whether through individual or collective petition to the management directly in charge, through appeal to a higher authority with the intention of forcing change in management, or through various types of actions and protests including those that are intended to mobilise public support'.

It is possible to interpret suggestions as assertions of the distinctive views of employees. These views may be more focussed on working conditions than the views of management. As such, suggestion schemes serve a purpose which overlaps with that of "Speak-up" schemes and grievance procedures, (Lewin and Mitchell, 1992; Luthans,1995; Townley, 2000). It is to be expected that many suggestions that represent the "voice" of the operating core, will take the form of either innovatory or corrective suggestions, and it is also to be expected that they focus on the internal rather than the external aspects of an organisations environment.

Examples of suggestions that carry the employees' voice are, for the most part, ones that could also be considered as corrective or innovatory. Suggestion schemes are not concerned with employees' motives and so there is no available data that could justify a definitive classification. However, two plausible examples are suggestions about employee safety in a utility company, one recommending the covering of exposed wellheads and the other the of marking wires with reflectors. A further possible example is a suggestion about the redesign of computer screens. An innovatory suggestion to print useful information on mouse maps might well be motivated by an employee's desire to reduces the number of tediously repetitious elementary queries.

In the experimental suggestion scheme, called U-Say, run at the University of Kent, students as well as employees were invited to submit suggestions via a web-based front end. In this scheme, suggestions were made anonymously and all accepted suggestions plus the feedback on them from evaluators were published on the web. The position of students within a university is complex, falling somewhere between employees and customers. Some of the suggestions were actually complaints and demands and a single suggestion could be rapidly followed up by closely related ideas, with the result that the suggestion scheme had some resemblance to a discussion forum on operational matters. To this extent, U-Say differed from all other schemes investigated in this study.

7.3 The impact of communication medium on knowledge transfer

Smith et al (2001) contend that there is an over dependence in knowledge management on IT based systems and that such systems do not reflect the complex nature of social organisations. The fieldwork described above suggests that, where knowledge needs to be shared in a large organisation and not just in one department in a single geographical location, a computer-based system can actually improve the quality of knowledge acquisition by raising the credibility of the collection mechanism and bypassing inhibitors such as doubting line managers. It also makes anonymity technically possible, if this is needed to elicit suggestions and ensure unbiased assessment and impartial reward allocation. However, scheme managers were convinced that the ability to refine suggestions before evaluation through direct contact between suggester and evaluator was a vital component in the maximising the benefits of a suggestion scheme.

8 CONCLUSION

This paper has described the workings of suggestion schemes from an information systems standpoint and has shown that they can provide a range of communicative functions within an organisation. Their track record as powerful tools in the management of the knowledge of operational level employees in machine and professional bureaucracies, means that suggestion schemes form a valuable complement to knowledge management tools developed to support teams of knowledge workers. A study of the techniques used, and particularly the interaction between automation and person-to person communication, will be of benefit to designers of large-scale knowledge management systems.

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