# The role of the help desk in the strategic management of information systems

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**Abstract**

Draws on a recently completed British Library Research and Development Department-funded project investigating key factors in help-desk success. Describes the methodology of survey by questionnaire and case studies. Summarizes the results briefly and focusses specifically on the results which feed into a discussion of the potential of the help desk in enabling an organization or its customers to gather data on systems use, plan and implement IT development strategies and assess their impact on attitudes to IT.

OCLC Systems & Services
Volume 12 · Number 4 · 1996 · pp. 4–19
 · ISSN 1065-075X

## Introduction and background to the research

The help desk can be much more than a reactive crisis center coping with the problems encountered by its customers: it can be used as a diagnostic and predictive tool, acting as a nexus for information and communication. The help desk has reached a critical point in its development, with the increasing complexity of IT systems, the growing demands and expectations of users, and its move into a more customer – rather than technology-oriented phase. This paper draws on a recently completed British Library Research and Development Department (BLR&DD)-funded project, the aim of which was to investigate the key factors in help-desk success, by identifying those areas critical to help-desk development and functionality. The project methodology and results are briefly summarized; and the discussion then focusses specifically on those results which feed into a discussion of the potential of the help desk in enabling an organization or its customers to gather data on systems use, plan and implement IT development strategies and assess the impact of such strategies on attitudes to IT.

For the purpose of the research, a definition of the help desk was developed by the authors: an accessible service point which will provide on-demand advice, information or action to aid the user in carrying out an IT-related task. Beyond this basic definition, the role of the help desk is often extended to that of a technology facilitator, achieved by the gathering and analysis of data at the help desk to manage end-user technology proactively. The definition was further developed to establish a definition of what might be termed a dedicated or "real" help desk. The definition identified three essential characteristics:

(1) centralized or multiple help desks,
(2) staff working exclusively, on rotation, on secondment (i.e. staff who work at the help desk who are not just answering the telephone while doing another job), and
(3) manning by experts or staff with basic knowledge who can pass on problems (excluding those where staff approach the relevant expert directly).

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The help desk is a relatively new phenomenon and does not fit neatly into a single-subject discipline: it is of concern to the computing, information science and service management communities. As a result, there has been little research to date: one project under way at Stanford University includes analyses of help desk software; Morgan and Thorp (1995) have investigated the use of desktop videoconferencing products to support advisory activities. Various undergraduate and postgraduate academic papers have been written and a number of higher degree studies are under way: Moorley at Stanford and Popejoy at the University of North Texas are working towards PhDs on help desks; Kahalewai at the University of Hawaii is a PhD candidate researching help-desk organizational strategies.

**'…There are a growing number of professional journals either focussed specifically on the help desk such as *LifeRaft* and *Customers*, or dealing with the broader field of customer support…'**

Literature on the subject of help desks consists largely of isolated journal articles, citing examples of help-desk use in industry or dealing with help-desk software: typically they identify problems but lack solutions. There are a growing number of professional journals either focussed specifically on the help desk such as *LifeRaft* and *Customers*, or dealing with the broader field of customer support, such as *Service Management*, *Call Centre* and *Service*. Articles occasionally appear in computing and information science journals, such as *Network Computing* and *InfoWorld*. Much of the information available on help desks derives from industry experience and is available through seminars and a growing number of consultancies. A few books have appeared, ranging from the practical *Help Desk Handbook* (1994) to examples which deal with specific types of help desk, such as *Implementing an IS Help Desk* (Plunkett, 1993). Four titles (Gallagher (n.d.), Czegel (1995), Bruton (1995) and *Staffing the Call Centre* (TCS Management Group, 1995) were published in 1995, evidence of a growing awareness of a demand for information and guidance. Among those authors who have reported on help desks, Hayward (1995) has described the role of the help desk as the approachable, public face of IT within the organization and a probing and highly critical tool. Pancucci (1995) argues that the help desk may take on the broader role of acting as the front line for IT with a move toward a more expert service acting as advisors in decision making and direct involvement in systems development.

Four specialist user groups have been established: the Help Desk Institute (HDI) in the USA has approximately 5,000 members; the Albuquerque Help Desk Association is a regional user support group; in the UK the Helpdesk User Group (HUG) had 910 members in 1995; and the International Association for Management Automation (IAMA) was instituted in 1995 to "…further the image of the help desk and to be part of its evolution, along with its managers, to a true corporate management centre" (*Service Management* 1995). There are also a number of official and quasi-official groups which offer advice and guidance to help-desk providers, such as: UCTLIG/UCISA a group concerned with user support in universities; the Central Computer and Telecommunications Agency (CCTA) set up by the Government to promote business efficiency and effectiveness through the use of information systems; and the Call Centre Institute for Quality (CCIQ) established in 1995 to act as a center for the exchange of best practice. None of these groups has existed for more than eight years and their appearance is a sign of the growing awareness of the importance of the help desk, not just in insuring the effective use of IT but in maximizing exploitation of the information-gathering role of the help desk, as an aid to organizational decision making.

A growing number of specialist consultancies are appearing: the MUNS Group provides advisory services and customized contract research; the Gartner Group provides a subscription service and has produced several hundred research notes; the META Group has carried out studies on issues such as costs of support and help-desk software. Other significant companies include Nolan Norton, Ovum and the Bentley Company.

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The Internet and e-mail communities have been invaluable in the course of gathering information in support of the project. Particularly useful have been: the Support Technology Forum[1]; a dedicated help-desk e-mail discussion list[2]; the HDI home page[3]; and Verghis' frequently asked questions resource[4] which is a valuable guide to other sources of information.

## Methodology

A full literature search was carried out initially and was supported throughout the project by continued background research and communication with centers of knowledge.

### The survey by questionnaire

Initially a survey by postal questionnaire (see Appendix) was carried out to gather data on:

- inception and development,
- operation,
- monitoring and evaluation,
- usage,
- staffing,
- scale of the operation,
- definition and formalization of the help desk,
- structure of the help desk within the organization.

The brief and simple questionnaire consisted of 25 questions, primarily multiple choice from closed questions. Much thought went into the framing of the questions, so that they should be intelligible to all respondents. Care had also to be taken in interpreting the responses, owing to the lack of a "common vocabulary" among respondents. The Help Desk User Group's survey of its membership was also used as a developmental model.

The questionnaire was tested on ten individuals: academics; experts and practitioners via Internet discussion lists; a local authority and a systems analysis/design consultancy. Some minor modification, in areas such as clarification of language, resulted from the piloting process.

*The response*

The questionnaire was disseminated to IT managers, accompanied by an explanatory letter. Completed replies were received from 145 managers, a 36.25 percent response rate (cf. 1994 Help Desk Institute's 22.4 percent members' survey). The data resulting from the present questionnaire will be biased more toward those organizations which do operate help desks.

The sample frame for the questionnaire consisted of 400 UK organizations, evenly divided between the public and the private sector:

(1) *Private sector* – ten sets of 20 by primary SIC (sector of industry code 0-9), each code group further split by size of company, with only companies with more than 50 employees included, providing a statistically defensible and representative cross-section of all types of private company.
(2) *Public sector* – the selection of organizations in the public sector was dictated by the nature of the sector, but sought to cover the major subsectors:
    - central government (18),
    - local authorities (146),
    - higher education (21),
    - National Health Service (15).

A modified, smaller scale but more comprehensive survey was carried out of online host or customer support help desks. This questionnaire was tested by a help-desk software manufacturer. The types of company targeted included all UK-based online hosts (plus one European and one US-based), and a representative sample of companies that provide remote customer support via a help-desk facility. Ninety-seven questionnaires were disseminated and responses were received from 40, a response rate of 41.23 percent.

### Case studies

The survey was followed by 14 case studies, including both IT help desks and help desks which have an explicit informational role or which service the information industry, providing a greater depth of understanding of the issues of concern in providing help-desk facilities, as well as the realities and constraints of the operational environment.

A case-study prototype had been carried out prior to the research project, helping to refine the proforma that was designed to carry out interviews. Participants for the case studies

were identified from the questionnaire. Eighty-three (57.2 percent) respondents from the survey expressed a willingness to participate in follow-up interviews, in itself a positive response. A diary of visits was constructed. The case studies covered a wide range of organizations in order to make comparisons between the public and private sectors, in-house and outsourced help desks, and employee- and customer-based help desks, including providers of online database services[5]. Each case was provided with details of the areas that would be addressed during interviews, allowing withdrawal if there were any doubts about involvement. Two companies had concerns about identification for reasons of commercial confidentiality, but still participated.

The case studies required the participation of a number of key personnel, chosen on the basis of their familiarity with help-desk operation, their length of service in the organization and their role in its management. Each case study consisted of two stages:

(1) An interview based on a structured questionnaire which gathered data on a number of areas: internal processes; historical and organizational factors; personnel; manning; methods of evaluation; user groups; information flow; and costs and benefits. Interviews were recorded and transcribed.
(2) An analysis of the facilities and documentation available to help desk and of data gathered from documentation used in the evaluation, operation or usage of the help desk.

No significant problems were encountered in execution of the methodologies. Any dubiety of interpretation in the data resulting from the questionnaire or the case studies was fully acknowledged.

## Summary of project results

This section contains a summary of project findings: full results are available in the form of a BLR&DD report (Marcella and Middleton, 1996).

### Current help-desk provision in the UK

User support within UK organizations exists in many forms with varying degrees of formality. The definition of "help desk" is not universally agreed on: while two-thirds of respondents described themselves as having help desks, further analysis of responses reveals the figure to be closer to half.

**'…There are often few resources at the help desk apart from staff expertise, and generally the bulk of staff come from an IT/computing background…'**

The help desk is generally an in-house function, usually part of the IT function, but now often under the auspices of customer support. It typically supports about 600 users (2,000 users in the case of dedicated help desks), and is primarily responsible for answering software applications queries, making repairs or adjustments to systems and installing software. Many are also responsible for inventory management, sourcing of equipment and statistical reports, but less than half have involvement in training. PCs and networks are prime responsibilities.

Only one-third of help desks restrict their service to a defined set of products, and fewer than half operate service level agreements. Over two-thirds have no charging/costing mechanism for their service, but two-thirds report some defined procedure to be followed in contacting them.

The use of help-desk software is becoming commonplace (almost two-thirds), although the use of artificial intelligence/knowledge bases is still limited. There are often few resources at the help desk apart from staff expertise, and generally the bulk of staff come from an IT/computing background. Staff with prior experience of help desks are still rare, and degree qualifications are uncommon. Fewer than half of the respondents had dedicated, full-time help-desk staff, the majority providing the service while performing their usual duties, and 20 percent operate a rotational system. Staff generally act as front-line problem solvers, although a significant proportion operate a logging-only service.

The incoming call volume to the help desk will obviously vary in line with the size of its user base and the complexity of the IT environment (for examples see Lusher and

McCormick, 1995), but typical figures are 30 calls per day, or 50 to a dedicated help desk. Resolution statistics vary widely, with even dedicated help desks reporting 50 percent or fewer solved at first call.

Training is still scant at the help desk, but better for "real" help desks: only just over half of the cases give training in the systems they support, while only two-fifths give training in telephone and communications skills.

Nearly all cases compile some sort of information, and the majority of cases gather call resolution statistics. User surveys are conducted by less than half. "Real" help desks were more inclined to gather information: 58.1 percent conducting surveys and 86.5 percent gathering statistics.

Most help desks (over 80 percent) use the information they gather to help in identifying regular faults. More than half use it in identifying the training requirements of the organization, but fewer (37 percent) actually produced reports for use at a higher management level, and less than a third reported that information was fed back into identification of users' processing requirements. Some cases reported that their information was used for purposes such as billing their users. The private sector made more use of information than the public sector, while "real" help desks exceeded both in all aspects.

The majority of help desks have come into being by "evolutionary" means, developed in reaction to demand. Where an organized approach has been taken, it has generally been by the use of internal workgroups (a third of cases), with minimal use of outside consultants.

**Case studies**

Many of the help desks visited were at present in, or about to enter into, a phase of restructuring/reorganization. The remainder had plans which might result in some level of reorganization or restructuring. This finding illustrates the dynamic nature of user support, and the fact that practices as well as IT environments and organizations themselves are constantly encountering change. User support is having to adapt to changes in technology and its ever more widespread use, and to changes in the structure of the organization which it serves. There is also evidence from the case studies of a distinct general shift toward a culture of customer service and a consequent requirement to be more sensitive to users' needs.

**'…Common uses of help-desk information are to highlight training needs, identify common causes of problems, or provide supplementary customer information for sales teams…'**

Practices within the help desk are becoming better defined, with procedures being developed and documented not only for solving problems, but for managing the whole call cycle and for communication, including producing reports for management to monitor help-desk performance, and reports which enable the organization to understand the requirements of its users better. Common uses of help-desk information are to highlight training needs, identify common causes of problems, or provide supplementary customer information for sales teams.

Staff training and career development and progression specifically for the help desk are increasingly becoming a major consideration. Some managers consider it important that staff are not having variety in operational tasks: their duties often include report production, site visits or producing documentation. "Burnout" is a recognized problem in the stressful help-desk environment.

The documentation of the above factors is key to ISO accreditation, and a number of the cases were ISO accredited or in the process of becoming so. This is a clear marker that their commitment to operational and service standards is high.

The use of help-desk call logging has become prevalent, with very few exceptions. While the software in many cases is greatly improving resolution times and effectively tracking problems through the entire call cycle, some features are used more than others. More sophisticated capabilities such as knowledge bases and expert systems are often yet to be implemented. Effective reporting facilities were cited in a number of cases as being essential in justifying resources for the help desk. Configuration management was also a primary concern of some organizations, and the capability of the

help desk to act as the central customer function within an organization has been noted by some.

The motivators for help-desk development are usually those factors noted above: growth in use and variety of IT and a customer service focus. Generally speaking, those within the organization who provide motivation for help-desk development are those directly involved with providing support or, in some cases, higher levels of management – often when a change in business practices forces a realization that maintenance of acceptable service levels is critical to retaining business. The help desk is well placed to gather and monitor data on performance, and can provide valuable information about users, particularly in the context of a customer help desk: in these situations, organizations have found that the help desk is a positive business, rather than simply a technical asset.

Despite many achieving greater recognition, most of the cases examined expressed their need for better resourcing. It is often the case that management is giving its "consent" to the help desk to develop, without giving the "backing" necessary to resource this. The question of resourcing has been less of a problem for customer help desks: in their role as point-of-contact for the paying customer, their importance is much better recognized because it is much easier to quantify. Compuserve, for example, is working in a highly competitive industry where quality of support may be as important to the customer as the product itself. This is also seen as an important factor by FT Information, who see quality of support as the "distinguishing factor" of their service. In the case of Abtex, the customer services division is fronted by the help desk, and there has been considerable investment in developing first-line support and integrating all customer and staff information on to their service management system. The more obvious the connection between quality of support and revenue, the better resourced the help desk is likely to be.

Reorganizations within the public sector have resulted in a more fragmented IT environment as central resources are replaced by individual departments contracting out IT to private companies. Definition of the help-desk's role and appropriate resourcing is less easy than in a commercial context.

**Problems and issues**

The problems which support organizations are now facing include:

- the explosion in use of IT and the greater variety of software and hardware;
- organizational restructuring, with resultant fragmentation of IT;
- eliciting support from operationally discrete technical and support groups;
- lack of information from development groups about new product roll outs;
- resourcing;
- service definition and monitoring;
- advice on developing the service.

The majority of help desks today are in an ongoing process of change resulting from changes in the IT environment and changes within the organization structurally and commercially. The problems they face are compounded by inadequate resourcing to tackle the problems thus precipitated. The pressure of increased call volumes is, for many, heightened by a lack of information to the help desk concerning new product releases, or changes/interruptions to service and a lack of response/communication in dealing with problems assigned by the help desk to the support team.

**'…The image of the help desk among both users and management is decisive in the allocation of resources, and all too often it is poorly understood, even vilified, by both…'**

Clearly then, the help desk faces problems which may be beyond its own control: issues such as communication with other departments cannot be solved unilaterally, and require the coordinated efforts of various levels of management. The image of the help desk among both users and management is decisive in the allocation of resources, and all too often it is poorly understood, even vilified, by both. The help-desk's traditional image is that of an isolated function, and it has often been the case that it is something of a "dead end" both in

terms of function and of staff career progression.

The generally "reactive" approach to help-desk provision has meant that the potential of the help desk has not been fully realized. Even where performance measurement does take place, it is often only in highly simplistic and mechanistic terms, e.g. number of incoming calls, number of problems closed. The "youth" of the help desk means that expertise in the field is underdeveloped. Management in particular have been in need of "direction" and are often unaware of or cannot afford the sources of expertise available.

## Current developments

*Consolidation of the help function*

The need for a single help desk has been precipitated by the need to remove confusion over "who to call," and to reduce the demand on support staff from direct approaches. The consolidated help desk encourages better communication between IT specialists in previously distinct groups: it also brings about economies of scale in terms of equipment and data sharing.

*Tools*

Software began to be developed for call logging in the late 1980s, and has very rapidly extended its functionality into numerous other aspects, such as knowledge bases, expert systems, problem management and change management. Its use has become prevalent among dedicated help desks, and there is now a large number of packages on the market, possibly in excess of 200. In addition, databases of problems with solutions are now available on CD-ROM, which can be integrated into help-desk software. Prospective purchasers of tools are faced with an array of choices, and are often poorly prepared to select a suitable product. This situation itself has created a market for expert guidance, with numerous publications resulting (Brown and Burrows, 1995; *Computing*, 1995; Muns, 1995).

*Standards*

Defining standards has been found to be essential by many organizations, both: internally in terms of procedures and training of help desk staff via ISO 9000; and externally via the establishment of service-level agreements.

*Performance measurement*

Performance can be measured in a number of ways, and requires the consideration and analysis of both quantitative and qualitative data:

- *Call statistics*. Call volume, call capture, call length, waiting times, second-level response times, resolution times, number of calls closed.
- *Feedback*. User surveys or random call follow-up.
- *"Mystery caller"*. Sample questions posed anonymously and evaluated by caller.
- *Benchmarking*. Generally by consultancy company: "league table" of help desks against which the tested service is compared.

*Professionalism*

As the need for trained support staff has become recognized, recognition of the profession and its practitioners has correspondingly risen. Certification is now possible, and NVQs have been developed specifically for support staff. Commentators have noted that the employees of IT departments are becoming more like "employees of the company" than just "technical people" (Leung, 1995). The development of organizations representing the profession has been a facilitator to professional recognition as well as developing practices.

*Outsourcing*

The experience of some cases shows that, while there may be benefits to outsourcing, such an approach must be used selectively and with care (Hayward, 1995). Cost containment is a positive factor but, strategically, it is possible for the client organization to lose touch with trends. Outsourcing is considered by many to be best suited to stable/standard problem domains, e.g. standard applications (Blaisdell, 1992). Efficient outsourcers will provide relevant statistics to prevent "out of sight, out of mind" syndrome. The success of outsourcing of any function is an area where research on costs and benefits is urgently needed.

## Key factors in help-desk development

The help desk has resulted out of necessity, usually reactively, and is generally still in a state of development, albeit that development is highly accelerated. The help desk is developing at two levels: at the "micro" level, developments are taking place within the help desk

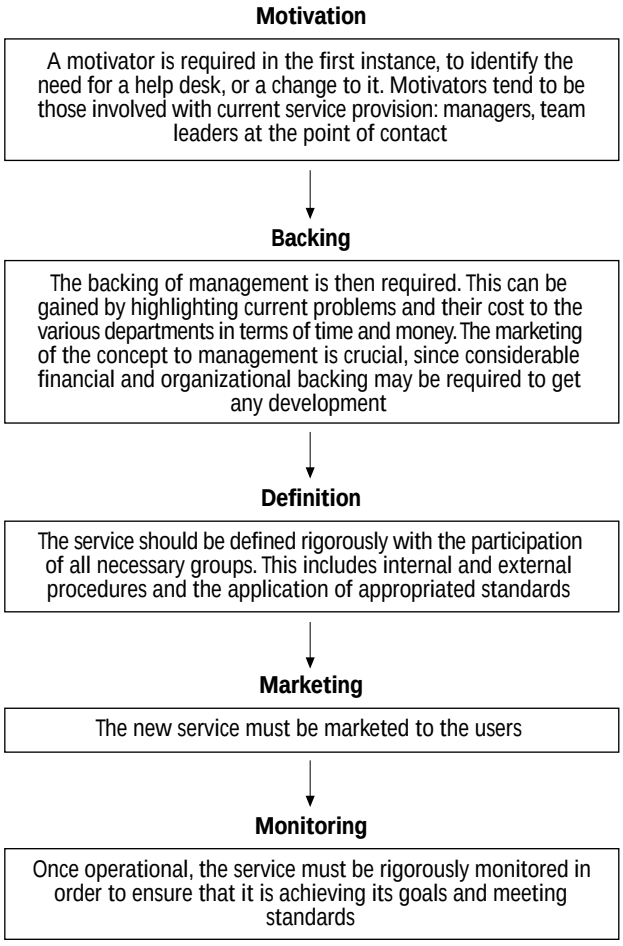
itself, defining how it carries out its remit of user support; and at the "macro" level the role of the help desk is being better defined within organizations in terms of its integration with the business of the organization, and communication with other units and management levels. Figure 1 illustrates the significant factors in help-desk development which may have influenced its sphere of influence.

Definition of the service, including consultation of standards, is vital to successful implementation and service delivery. Management and users must be apprised as to what services they can expect, and be assured of certain levels of service via ongoing performance measurement. The planned services must match the spectrum of users' requirements, which may be diverse and not solely technically related: increasingly, help desks are dealing with clients on a global basis with varying levels of technical familiarity (*Call Centre Europe*, 1995).

## The potential of the help desk in the strategic management of information systems

The potential of the help desk to act as a management asset is beginning to be recognized. The development of customer service orientation has shifted the emphasis away from the help desk as IT's technical problem fixer to the help desk as the front-end to a service provider. The help desk as an automated management center, acting as the nexus for the full integration of IT and customer service into the organization, is evidence both of an increased recognition of the role which the help desk can play strategically and a signal of the expansion

**Figure 1** Path of help-desk development



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of the help desk in a manner that might not have been predicted from its original "mop up" role.

If the traditional help desk can be regarded as "a bucket underneath a leak," the modern help desk could be said to be fixing the leak, and looking out for more bad weather: problems are not solved by the bucket, they are solved by preventing the need for one. This is encapsulated by the slogan for the Service Management Europe 1996 Conference: "Stop fixing, start solving". Blaisdell (1995) states that the purpose of a help desk is in fact "to prevent support calls."

The presence of the help desk is not an "admission of failure": users will always require support in the face of the inevitability of change and the growing complexity in IT environments; the level of ability among users is highly variable and, despite education and training, they will continue to operate on a "need-to-know" basis. Whatever other means of support are available, it has been established (Waern *et al.*, 1991) that users prefer help provided by the human voice. This project would suggest that, far from being doomed to extinction, the broader role of the help desk as a communicator, facilitator and coordinator will ensure an important continuing role for the help desk. While reducing "problem" calls, the help desk may take on the broader role of acting as the front line for IT with a move toward a more expert service acting as advisors in decision making and direct involvement in development (Pancucci, 1995). Table I illustrates the direction which the most responsive and "modern" help desks are taking.

The move from traditional to modern help desk is a move toward the help desk as an embodiment of IT within the organization, aware, informed and informative. At its most highly developed, the help desk can be the approachable public face of IT within the organization and a probing and highly critical tool (Hayward, 1995). The new approach to the help desk represents a paradigm shift in the understanding of the role it plays within an organization. While efforts have tended to focus on how the help desk can organize itself better internally, it is now recognized that actually to provide service to a user, the help desk must be an integral part of the IT and customer service process.

**Table I** Traditional versus modern help desk

| Traditional help desk | Modern help desk |
|---|---|
| Reactive | Proactive |
| Fixes the *results* of the problems, not the causes | Fixes problems *at source* |
| A dead end: | Gathers and disseminates information |
| for information | Provides a worthwhile career path |
| for careers | Customer service-oriented staff |
| Technically-oriented staff | Integral |
| Isolated | A key motivator and aid to management decisions |
| No influence on matters external to help desk | Justifies resourcing |
| Struggling for resources | Aggressive – marketing its services |
| Passive – awaiting customer approaches | Strategy driven |
| Demand driven | The public face of the organization |

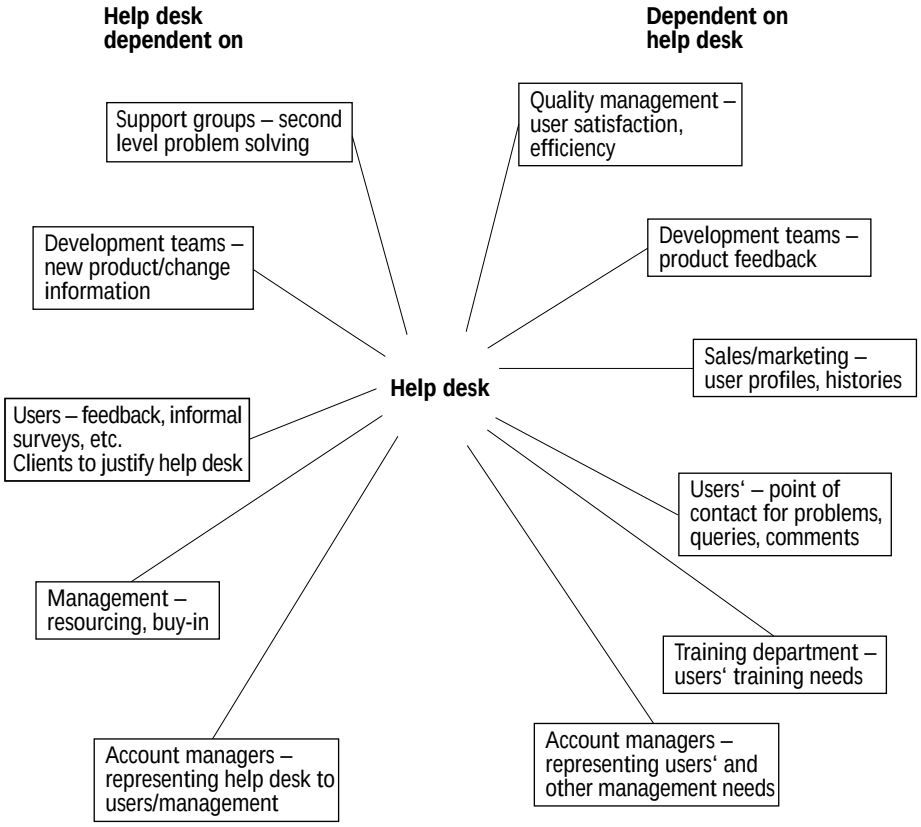
The help desk is at the nexus of a web of dependency and the Figure 2 illustrates the links that may potentially be made throughout and outwith an organization.

The significance of the help desk to the provision and development of effective information systems has yet to be fully established: however, there are a number of ways, outlined briefly below, in which the help desk can be used, and is already being used by some organizations, to improve information systems provision and support.

### Gathering data on present patterns of systems use

It has been found that 86.5 percent of dedicated help desks gather what can frequently be quite simple statistics on usage. Statistics have a number of very valuable potential uses: as a source of information on the nature of problems encountered at present; to monitor usage of systems and the spread of users for each; to identify training needs; to identify gaps in provision and duplication of data input; and to assist in the mapping of the present pattern of information collection, dissemination and use within the client base. From the results of the survey, more than half of all help desks are at present using such information to identify

**Figure 2** Help-desk dependencies




training requirements. More than 80 percent of all help desks use the information they gather to identify regular faults, while less than a third reported that the information was fed back into the identification of users' processing requirements. So there is evidence that valuable information is being gathered but it is clear that at present only a minority of help desks are using the information to assist in the future development of systems.

### Improving intra- and interdepartmental communications

At the help desk, information is gathered which may have value to other functional departments within the organization in developing, for example, a better understanding of customer needs. Such information might be used, for instance, by a marketing department to develop new promotional campaigns or be fed back into the product development cycle.

The help desk's role as a communicator can insure that the different arms of the IT operation are kept informed of each others' actions and intentions.

### Facilitating the management of change

As a nexus for information, the help desk may ease the processes of change by maintaining continual contact between the groups concerned, insuring that plans are not executed without prior knowledge of those affected. There are numerous mutual dependencies throughout any organization, and the help desk is either at the center, or has a contribution to make there (see Figure 2). Where processes are in place which involve the help desk in communication and decision making, situations can be avoided where departments or divisions work counter-productively. As the part of IT which is most visible and familiar to users, the help desk is ideally situated to act as a disseminator of change-related information. Coordination is a vital component of change management: Morgan (1996) states that "the help desk can also ensure that each department continues

achieving their assigned roles under the enterprise goals."

**Developing a responsive and interactive relationship via the help desk's interface with customers**

The results of the project illustrate the potential of the help desk to act as a link between IT and the customer, so that the help desk may act as a point of information interchange, feeding information from the customer into development teams and feeding information back out from the development teams to the customer. Overall, user surveys are conducted by less than half of the respondents but 58.1 percent of dedicated help desks conduct surveys of user satisfaction. The help desk has a central position within many organizations, interacting with both staff and customers. It is in a unique position to develop a relationship that not only provides support to both groups, but also gains input from them in terms of their needs and operational requirements. Often the help desk is the IT point of contact within the organization, whoever is served, and has a role for the help desk to play in promoting the organization. In particular with the development of online help desks, the promotional role of the help desk may be further emphasized. Users may come to a help desk's World Wide Web pages for advice and guidance, but they will go away with an image of the company and information about its products and services.

A shift toward a customer service rather than a technology orientation is taking place, and evidence of that trend is drawn from the case studies.

In a climate where IT is a prime candidate for outsourcing – as evidenced by the National Health Service case study and the proliferation of literature on the subject – IT operations must show themselves to be in touch with the client base's requirements, or IT solutions may be found elsewhere.

**Collecting data on IT needs, both present and future**

The help desk can gather data continuously: therefore, it has an inherent advantage over other means of needs-assessment and performance monitoring. While the periodic review has in the past been a standard way of assessing needs, this may be troublesome, expensive and result in sudden changes. It gives only a snapshot of a situation. If the information which the help desk can gather is used effectively, requirements and performance may be monitored on a continual basis, making use of knowledge gained over time concerning users and systems.

**Investigating the impact of IT developments and strategies on customers and functions**

Through the help desk's two-way communication with its customers it is able to collate information on the effectiveness of current strategies, either by soliciting customers' views or by the interpretation of incoming call data. Productivity losses may be correlated against changes in the IT environment and areas targeted for improvement. The knowledge thus gained can be used in future implementations, to preempt problems which have occurred in the past.

**Facilitating software/product implementation and development**

The requirements definition process is vital in the development of any product, and the help desk is an ideal instrument for gathering information on user needs and preferences. If a continual profile of the user base is maintained, products may be developed which are targeted toward their requirements, or updated in response to suggestions or difficulties. The process of product testing need not end at a certain point: it can be continuous and ongoing, using help-desk data dynamically to maintain customer satisfaction.

**Producing management reports consolidating information gathered in a way that may be of use to management in developing IT/IS strategies and future plans**

As we have seen, only 37 percent of all help desks produce reports for use by management. Although there is ample evidence that a great deal of data are being gathered, there is equally evidence that at present only a minority of help desks are using the data in a constructive way in order to assist higher management decision making. It is often the case that help-desk data is seen as being the help desk's business: higher

levels of management are insufficiently concerned with the details of IT, and do not yet comprehend the value of information from this source. The challenge for the help desk is to analyze the data gathered presently in terms of their utility for higher management and to make the case for their value in future IT and information systems strategy development.

Ultimately, it is possible to identify three core functional roles for the help desk in terms of information:

(1) monitoring information systems use and satisfaction;
(2) disseminating information about systems and future plans;
(3) promoting the organization to staff and clients.

## Conclusions

If the help desk is to insure management backing rather than simply consent it must make its case in terms which management understand. The successful help desk uses the information which it gathers to make the business case for receiving resourcing, or to give its voice influence. The help desk is increasingly seen as a business rather than a technical function, and must align itself accordingly. Its operation must contribute toward the greater organizational goals (Bultema, 1996; LaBounty, 1996), showing itself not simply to be an overhead, or cost center, but an asset, or profit center (Bultema, 1995). This is borne out by the case studies which found that resourcing for the help desk is much less of a problem where its performance is directly connected with revenue, as in the cases of help desks serving paying customers.

The key to the success of the help desk is its "front-line" position which allows it to gather data from users over time, thus not only solving their problems as they call but eliminating these problems at source and improving services in line with business needs. Whereas the traditional methods of quality assessment and requirements analysis involve periodic review, the help desk can dynamically provide data as a part of a process of continual change and improvement.

It is important that we acknowledge not just the changing and developing role of the help-desk, but also the new means by which help-desk support can be provided, that is by Internet both via e-mail and World Wide Web. Verghis' FAQ facility has links built into a host of different help desks available via this medium. There are implications for users and providers in this new form of provision which have yet to be researched. While there are burdens for providers in having to support technologically the development, the potential is there to encourage self-sufficiency in users and to minimize expense in staffing and dealing with individual calls. Harris (forthcoming) argues that one immediately apparent effect is the growth in the number of trivial calls, but that the number of complex calls has also grown (see also Mumford, 1996). There are also security issues. However, the growth in demand is not as a result of the help desk being available on the Internet, but rather from the growth of Internet users, often non-technological users. This is evidence that the need for help-desk support will continue to grow: that there will be a greater need for help-desk support within the complex organizational IT environment and that the demands that are made of the help desk will grow in number and complexity. From the evidence of the past, help-desk managers must not simply react to these changes but use them as a way of signaling the real benefits that can accrue to an organization from an effective help-desk operation. This project has demonstrated that the modern help desk is not just a reactive form of user support, but has a role to play in the support of management, in the development of IT strategy and in sales and promotions.

## Notes

1 Access via Compuserve: "GO CSTECH".
2 Send e-mail containing "subscribe HDESK-L" to LISTSERV@WVNVM.WVNET.EDU.
3 http://www.helpdeskinst.com
4 http://www.duke.edu/~pverghis/hdeskfaq.htm
5 Two privatized former public utilities; one higher education institution; one systems supplier; one health service; one airline; one library system supplier; one information service provider/online host; one online host; one local authority (outsourced); one car spares manufacturer and supplier; one software

house; one central government department, one computer systems manufacturer.

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## Appendix. IT help desks and user support – questionnaire

### A British Library funded research project

We would be grateful if you would take a few minutes to answer the following questions and return this form in the envelope provided, even if your organization does not have a "help desk" as such: we are interested in how support is provided, if at all.

In the case of a help desk contracted out to external company (outsourced), questions should be answered with reference to the client company. Where more than one help service exists, please answer the questions with reference to a single one dealing with IT queries. All responses are given in strictest confidence, and names of individuals and organizations will not be divulged.

*If appropriate, tick more than one response, adding annotations where necessary*

- To help users of IT and computer technology, does your organization have:
  - ☐ A single, central help desk specifically for the purpose
  - ☐ More than one such helpdesk, If so:

How many? .....
Are they split: ☐ Geographically ☐ By area of expertise/responsibility

☐ A department which does not exist exclusively to provide a help desk, but which deals with IT-related queries
☐ Designated "support groups", i.e. not paid support staff, but networks of employees with sufficient expertise to help others
☐ The organization relies on commercial vendors' after-sales support service
☐ Other (please describe)

.....
.....
.....
.....

- Is the help service outsourced, i.e. is an external company contracted to provide it?
  ☐ Yes ☐ No
- Which department(s) is responsible for the help service, or managing its outsourcing?

.....
.....

- How would you rate the help service's level of autonomy (i.e. its level of decision-making independence) from its parent department?
  very low 1☐ 2☐ 3☐ 4☐ 5☐ very high
- Approximately, how large is the user group, i.e. the number of people who may potentially require help from this source? .....
- Over how many sites (approximately) are these users distributed? .....
- For which of the following tasks is your help service responsible?

  ☐ Providing computing systems
  ☐ Ordering equipment and spares
  ☐ User training
  ☐ Statistical/management reports
  ☐ IT inventory management
  ☐ Repairing or adjusting users' hardware or software
  ☐ Software applications queries
  ☐ Installing software
  ☐ Other (please describe below)

.....
.....
.....
.....

- Does the help service deal with queries:
  ☐ For a wide, unspecified range of IT products – any query at all
  ☐ For a certain number of specified supported products
  ☐ For very specific, organization-wide systems only
- Does this include: ☐ Networks ☐ PCs ☐ Mainframes ☐ Other
  (Please describe) .....
  .....
- Is the help service provided on a service level agreement/contract basis?
  ☐ Yes ☐ No
- Does the help service charge for its service? ☐ Yes ☐ No
- Are users required to follow a specific procedure in approaching the help service?
  ☐ Yes ☐ No
- What means are used at the help service in order to solve problems?

  ☐ Product instruction manuals
  ☐ Call logging/tracking software
  ☐ Expert system/knowledge base
  ☐ Staff expertise
  ☐ Reference sources: printed/online
  ☐ Remove computer access to the problematic system
  ☐ Other (please describe)

.....
.....

.....
.....

- At one time, how many staff: *Only* answer phones, passing on problem details

  .....

  *Only* resolve problems

  .....

  Answer phones *and* resolve problems

  .....

- Do staff work at the help service: ☐ exclusively ☐ on a rotational basis
  ☐ while performing other duties ☐ on secondment ☐ other
- Approximately, how many calls are received daily?

  .....

- Approximately, what percentage of calls are: solved at the first call?

  .....%

  require further analysis

  .....%

- How are incoming calls handled?
  - ☐ Help desk is manned by experts taking the calls
  - ☐ Contact is made directly to relevant expert or team for specific problems
  - ☐ Calls are handled by staff with basic knowledge and passed to expert or team if not capable of immediate solution
  - ☐ Receptionist handles all calls and adds to "job list" – no direct communication with experts
  - ☐ Other (please describe)

    .....
    .....

- If known, how many staff had the following attributes prior to joining the help desk?
  ..... help desk experience ..... .IT/computer experience
  ..... relevant degree ..... .general administration skills
  ..... experience of this organization ..... .other
- What training do staff receive for working in the help service?
  - ☐ Training in the systems supported ☐ Learning piecemeal on the job
  - ☐ Telephone/communication skills ☐ other

  (please describe) .....
  .....
  .....

- In analyzing the help service's performance, which of the following are compiled?
  - ☐ Users' perception surveys ☐ Call response/resolution statistics
  - ☐ Other (please describe)

  .....
  .....
  .....

- How is the information which is generated through help-desk operation made use of?
  - ☐ Identification of user training needs
  - ☐ Identification of regular hardware/software faults
  - ☐ Identification of trends in users' processing requirements
  - ☐ Information is used at higher levels of management, e.g. strategic planning
  - ☐ Other (please describe)

  .....
  .....
  .....
  .....

- For how long has the help function existed in its present form?
  . . . . . .
- How did the help function as it currently exists come into being?
  ☐ "Grew" informally as need arose ☐ Independent consultants brought in
  ☐ Internal work group assigned ☐ Other similar organizations consulted
  (Brief description) . . . . . .
  . . . . . .
  . . . . . .
  . . . . . .
  . . . . . .
- Briefly, what do you perceive as the major problem(s) facing the help service, or ways in which service could be improved? (Continue on a separate sheet if necessary) . . . . . .
  . . . . . .
  . . . . . .
  . . . . . .
  . . . . . .

We would like to be able to use these questionnaires in order to identify suitable organizations for further study this year. Would you be willing to participate in a follow up study? ☐ Yes ☐ No
If "Yes", please ensure that we have the correct details for contacting you:

Name: Department:
Location: Telephone:

*If you have any queries regarding this questionnaire, please do not hesitate to contact:*

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Further comments, answers you would like to enlarge on, or areas of significance you feel we have neglected may be continued on another sheet, or addressed to the above.