

Should we take disintermediation seriously?

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1. Introduction

Since the late 1960's technological developments have influenced the services provided by libraries and information services. These developments have also influenced the career expectations of librarians and information specialists, especially with regard to online searching. (The inclusive concepts "information services" and "information specialists" will be used hereafter.) The introduction of computerised databases by commercial services, improvements in telecommunication technology, and the high costs involved in online searching, initially offered exciting opportunities for information specialists. They could be the *gatekeepers* of electronic information. At first, the pace of change was comfortable enough to give information specialists time to adapt their service attitudes, skills and relationships with users. Whether they have used the time effectively, remains to be seen.

Developments such as commercial services aimed at end-users, more user friendly services, and the introduction of CD-ROM databases raised the question of end-users doing their own online searches. This was not taken too seriously. The growth in end-user searching was rather slow. In fact, there was little to prepare information specialists for the impact that the Internet has had on end-user interest in information retrieval. All of a sudden the information specialist is confronted with a changing social and working environment. More people have access to computers and numerous end-users demand access to the Internet. These end-users claim to do their own information searching and demand documents delivered on time, as well as guidelines and systems for organising the overload of information. "Disintermediation", "end-user empowerment", "outsourcing", and "reintermediation" have become the buzzwords of the late 1990's.

Owing to the number of end-users claiming to do their own online searching, some experts have gone so far as to predict the doomsday of libraries and information services and the end of the intermediary - in fact, the end of information specialists (Kieft 1996). Others consider the changes as a welcome opportunity to adopt more exciting roles and to widen their horizons (Brooke 1996; Finlay & Finlay 1996; Hayes 1996). Disintermediation is regarded as both a threat and golden opportunity

Reaction to disintermediation will depend on whether one views it as a passing phase or something to be taken seriously. I shall not gaze into crystal balls, read tea leaves or ponder over palms, as the danger of future prediction is obvious. What I shall do instead is seriously analyse some of the issues which influence disintermediation, in the belief that this will shed some light on the future of intermediaries.

This paper will consider the concept of disintermediation, the methods for investigating disintermediation and the different ways to react to changes. Using a model to analyse the current situation, a new emphasis in the role of the information specialist as

intermediary will be argued. The general capability of information specialists to adapt to the changes will be considered. Have most of them tried to refine their searching skills and knowledge of information systems, or has this been left to a privileged elite? Finally, accepting the possibility of disintermediation, a number of roles for information specialists will be argued and with these roles as point of reference, the initial and continuing training of information specialists will be considered.

2. What do the concepts "disintermediation" and "user empowerment" mean?

Disintermediation relates to the role of the intermediary in acting between information (or other products) and its end-users. It is the finding of information by an end-user without the need for a third party. "As applied to libraries, disintermediation means the diversion of information from centralised physical repositories to alternate sources available directly through computers and computer networks" (Gellman (1996:2). Disintermediation has already affected a number of other sectors such as the banking, music and publishing industries

End-user empowerment refers to end-users having access to information and having the necessary skills to retrieve their *own information* according to their *own needs* — in other words they *can* do it on their own. With empowerment they should be less dependent on information specialists, which does not necessarily mean that the information specialist as intermediary will become obsolete: not all end-users will have the time or the interest to do their own searches. Although there is a connection between end-user empowerment and disintermediation, end-user empowerment does not necessarily imply disintermediation — an argument which will be pursued further in this paper.

3. Reacting to a changing environment

We react in different ways when our environments and our lives change. Our reactions depend *inter alia* on our

- knowledge of the changes and their influence
- adaptability
- self esteem
- skills
- philosophy of life (e.g. a fatalistic approach to the unavoidable, or belief in the possibility of positive change)

In a working environment, reactions are influenced not only by individuals but also by task teams, management, and the corporate or organisational culture. *Individual* as well as *managerial* reaction will be stressed in this paper.

Information specialists could react in various ways to disintermediation. They may, for example

- ignore the changes and the implications these hold for them

- acknowledge their uncertainty to proceed and await further developments that might shed more light
- claim skills, capabilities or responsibilities for certain tasks
- opt for something completely different
- speculate on the matter (pessimistically or positively)
- depress everyone with their gloomy predictions (without considering alternative options)
- employ methods such as scenarios and future forecasting
- analyse other people's reactions in similar situations (e.g. disintermediation in banking)
- reflect on their past actions
- analyse their situation in a systematic way, appraising the changes, realities and options

Examples of these types of reactions to the possibility of disintermediation can be traced in the Information Science literature.

3.1 Ignorance, passivity and staking claims

The first three reactions hold little promise for survival of the intermediary. Quite often passive reaction can be attributed to ignorance, but pleading ignorance will not prevent the consequences of disintermediation. Instead, information specialists should be encouraged to be alert to changing environments and user expectations; this is a prerequisite for survival in the 1990's and beyond. Changes with regard to the wider environment, for example changes in education and the working environment of end-users, should be noted as well (more about this later on).

Merely proclaiming fields of expertise (e.g. in information management) could also prove quite fatal. Information specialists doubt end-users' capabilities to search and evaluate their search results effectively. But no attack on end-user searching (not even one backed by research results supporting our arguments) will convince end-users to quit if they have set their minds on doing their own information searching. However, receiving an excellent service from information specialists, such as value-added products or current awareness (alerting services) may convince them of the importance of information specialists. The same may be said for competent training programmes which demonstrate the power of effective searching. In other words, the proof of the pudding is in the eating. (This argument will be pursued further.) Instead of arguing with end-users and other role players who may threaten the position of intermediaries, it makes more sense to invest time and energy into securing the position of information specialists.

3.2 Pursuing completely different options

Many people argue that information specialists should make a complete career change.

Options mentioned include webmasters, publishers and knowledge managers. In this way the sinking ship can still be abandoned in time. The effect of information specialists withdrawing their expertise in information organisation and retrieval, systems design, user needs *et cetera* from traditional information services may, however, be disastrous. It is for example generally acknowledged that finding information via the unstructured Internet can be chaotic. Information specialists may, however, help to order the information more effectively.

3.3 Opinion raising

Experts are quite often quoted on their opinions. Whatever your point of view on disintermediation, you will surely find someone you can quote to support your opinion. Although expert input is always worthwhile food for thought, remember that experts can also be wrong. Tenopir (1996) for example admits to predicting that end-user searching would take over the role of the intermediary. She now believes that there is a future for both end-user and intermediary searching. Although it is essential to take note of expert opinion, this should never be the sole basis for decision making.

3.4 Scenarios and future forecasting

A very useful study, employing scenarios, was conducted at the University of Northumbria in Newcastle in the United Kingdom by the team responsible for the IMPEL project. It is reported by Edwards, Day and Walton (1996) and also by Walton, Day and Edwards (1996). The project deals with the social, organisational and cultural impacts of the electronic environment in Higher Education in the UK. From this study on the future role of intermediaries, a number of issues can be highlighted, including that:

- management and staff hold different views on the future of the information specialist (including the intermediary's role)
- there is hesitance about some of the new roles and partnerships predicted for intermediaries; a teaching role on the same level as academics might, however, be quite acceptable
- there is fear for the status of information specialists and handing control over to end-users
- the role of the information specialist is influenced by wider cultural, social and organisational changes

(The notion of the information specialist working in a wider environment will be dealt with in more detail in section 4.)

The IMPEL project identified four possible scenarios for disintermediation, namely

- the intermediary will still exist
- the intermediary might not be a librarian
- the intermediary will have a different role to play
- the control of the flow of information may be restricted by a number of factors

(Edwards, Day & Walton 1996)

When considering the wider environment in which information specialists are working (section 4), it should become apparent that each of these scenarios is indeed viable. The scenario will naturally depend on the type of information service, the organisation to which the information service belongs, the wider society, as well as the reactions of individuals. (There is for example little chance of end-user searching in communities which are battling with basic literacy problems, or which do not have large scale access to the Internet and other electronic information sources.)

3.5 Analysis of other's reactions to similar situations

The banking and music industries were also confronted with the threat of disintermediation. The reaction of banks to disintermediation is well documented. After initial bewilderment, they reacted by reclaiming some of their responsibilities; at least *they* were in the financial position to support their claims. In the South African banking industry, laws were also introduced to secure some of the functions (Badenhorst 1991; Van Zyl 1989). Certain functions were, however, open to the end-users — on condition that they accept responsibility for their own decisions.

Although much can be learnt from the reaction of the banking industry, not all its options are open to information services. The latter do not have the funds available to implement revolutionary services (drawing end-users). Neither will a law be passed to secure the role of the intermediary. An interesting difference between information specialists and bankers is that the former have never really accepted responsibility for the quality, correctness or even the thoroughness of information searches. On the other hand, unlike money and financial growth, the power of information is not always realised by end-users. In other words, it sounds less threatening for end-users to take responsibility for decisions about their information needs and information retrieval, than for the investment of their money. It would no doubt be a completely different scenario if end-users had to pay for the information — especially according to the tariffs charged by commercial database services.

A number of information services have already shared their experiences with disintermediation, as well as their reactions (Allen 1996; Blinko 1996; Davies 1996). Some of the issues raised are:

- preparing for new roles
- improving the image of information specialists and awareness of the service they can provide
- monitoring user search behaviour in a particular context as well as the quality of information to which end-users have easy access, in order to determine the role of the intermediary

3.6 Reflecting on past behaviour

It is, to say the least, unfortunate that a large number of information specialists have yet to develop skills in online searching, database design and the evaluation of database products. Initially there appeared to be only a few elite online searchers. Although intermediary searching requires special skills, the fact that many other information specialists are still uncertain about CD-ROM searching and using the Internet (especially

in South Africa), reflects poorly on the professional image of intermediaries. Public librarians especially seem to have missed out on the opportunity to become online searchers and to offer online services to their users (Nicholas & Frossling 1996). Surveys on intermediary searching also leave doubts about the seriousness with which the new skills were adopted, practised and refined. Saracevic and Kantor (1991) come to the conclusion that online searching is still a very imprecise art.

Although the extent of end-user searching was gradually predicted with more certainty, and new roles for intermediaries were envisaged (e.g. training, advising on database design, and evaluating database products) information specialists did not seem to take this too seriously. There is little evidence of formal in-service training of intermediaries in searching skills, quality checks and performance appraisal. Even suggestions that information specialists should improve their teaching skills, teaching methods and teaching materials were largely ignored. Instead of reconsidering the information specialist as a potential effective trainer (and then training them for this role), end-users were blamed for the ineffectiveness of their searches.

As for the past behaviour of information specialists, or more specifically intermediaries, there are certain questions which each *individual* who wishes to continue a career as intermediary (or at least a role in the field of online searching) should ask him- or herself. These questions include the following:

- Do I know the information sources (e.g. databases), and do I always make an effort to select the best database?
- Do I know the finer details of the search commands?
- Am I critical about my search strategies, and do I try to refine them according to hints in the database documentation or other subject literature?
- Are my online searches cost-effective?
- Am I up-to-date with developments in online searching and search techniques?
- Am I up-to-date with the documentation of database services and database producers?
- Do I make the time to attend updating courses (e.g. the lunch time sessions presented for database services like Knight Ridder Information and Questel/Orbit)?
- Do I run an electronic current awareness service for myself?
- Do I have a personal database to organise my information collection?
- Do I critically evaluate database quality and user interfaces and communicate my opinion to database services and producers?
- How familiar am I with the results of research projects concerning online searching or related fields?

In other words, do individual intermediaries really meet with the requirements that should be set for an effective information service? Are they really on top of their jobs? These are only a few of the questions which require reflection. There is no way that information specialists can try to stop full scale disintermediation if they are not

specialists in their own fields.

Except for ignorance, passivity and staking claim, the reactions towards disintermediation discussed here all have some merit. They do not, however, provide a holistic view of disintermediation and the reaction of information specialists. In addition to these an alternative is proposed, namely a systematic analysis of our current situation, considering the changes, realities and options. This will now be dealt with in more detail.

4 Analysis of the intermediary's situation in a wider society

Information specialists and information organisations are part of a larger society or environment. Their own working environment and roles will be influenced by the society and other role players. A few of the aspects which influence disintermediation will be looked at briefly.

4.1 Society at large

Each day more people have access to computers and the Internet (from their workplaces, homes and Internet cafes). Awareness of both information and computer skills are improving among employees as well as the general public. One can therefore reasonably assume that access to computers will continue increasing and that more people will become aware of the exciting variety of information offered via the Internet. On the other hand, there will still be people without access to information.

Society is also undergoing marked changes in education. Distance teaching, resource based learning, and problem based curricula are fast becoming current realities; so are lifelong learning and continuing education. These educational issues all require that individuals either have their own access to information or have to be provided with information.

4.2 Information sources available

Although the Internet can generally be assumed to be the impetus for the growing end-user interest in online searching, more structured sources of information have been available for a long time. There are for example printed indexes and bibliographies, and since the early 1970's there have been database services such as those provided by Dialog. Currently information searching via the Internet is still chaotic. Although the search engines *et cetera* will improve, this will take time and still does not imply that more structured sources will not be available (at least for some time yet).

To use the Internet and structured information sources requires knowledge of where to find information as well as how to use the sources. With structured sources especially there are numerous guidelines, newsletters and other information to keep track with. Even if this is made available online, it requires both *time* and *effort*.

Paying for information (for example online databases or push technology) may be a new and discomfoting experience for end-users, especially since some of these services are currently very expensive. Some users may not be in a position to pay for such services.

The lack of quality of many Internet sources, as well as the availability of the sources, is a major problem, thus emphasising that more structured information sources will be invaluable. Of course, these sources could also be made available via the World Wide

Web (this is the latest tendency with commercial database services).

Although a wide variety of information sources is therefore directly available to end-users, their use is not always unproblematic. In spite of the above-mentioned problems or realities, it must be accepted that because of the Internet, more people realise the availability and importance of information. The challenge for intermediaries therefore lies in promoting the use of more structured sources, and also in their own capabilities in providing a service using these sources.

4.3 Process of information searching

In order to determine the possibilities for disintermediation, the process of information searching should be analysed. Many systems claim to be user friendly, making the search process transparent for the end-user. Monitoring these claims can help information specialists to find a new role, for example in the improvement of information systems, user interfaces and the training of end-users.

Information searching as practised by information specialists has always been more than just finding a piece of information or a couple of sources dealing with a topic. The complexities of the process and the importance of using quality sources should be analysed and shared with end-users. A clear understanding of the process is also essential in training end-users. How many intermediaries, for example, take note of research projects on intermediary and end-user searching or the influence of cognitive styles on online searching (e.g. the study by Ford, Wood & Walsh 1994)?

4.4 Organisations

Organisations will differ from their employees in their expectations with regard to information searching. Some might expect it to be part of an employee's daily tasks — stressing the importance of keeping a competitive edge. Others might merely encourage end-user searching. Living in the information age, it hardly seems possible for any organisation to forbid employees to do *any* form of information searching. The interest in end-user searching will therefore depend on an organisation's policy, as well as a number of other factors (e.g. financing, available technology, and training in search techniques) and presumably also the nature of its work. Several case studies have pointed out that although end-users in fields such as law and medicine have had access to online information for some time, they still prefer to use intermediaries.

Information searching is time consuming and can even be counter productive (depending on how the time is spent). It therefore remains to be seen how many end-users will prefer to take responsibility for their own information searching. Current reports seem to predict that it will definitely not be everyone. Since not all organisations have their own information services, a wider marketing effort by existing information services might even help to secure more clients for intermediaries.

4.5 Information services

There are different types of information service (e.g. public libraries, community information services, school media centres, special information services, academic information services and information brokers). Each will be affected differently by the scenarios sketched for disintermediation, so predictions about disintermediation cannot merely be accepted for all types of information service. Each individual service should be analysed. At this stage it appears as if public libraries will have the most problems securing a role as intermediaries, but drastic action may prevent total disintermediation

in this field. It should be obvious however that unless an information service actively adopts a programme for reintermediation (i.e. securing the role of the intermediary), it will be unable to carry on with its current role.

4.6 End-users

End-users are not only employees of organisations, with certain expectations. They are also individuals with individual skills, preferences and time constraints within which they have to complete their daily tasks. There will probably always be those who prefer to spend their time in front of a computer screen. With the growing emphasis on lifelong learning, part-time studies, and social realities such as single-parent and dual-income families, it seems unlikely that there will be many people searching for information in their spare time. The needs and preferences of end-users in a particular organisation should therefore be determined (and continuously monitored) before making any decisions on the possibility of disintermediation and the effect on the information specialist.

Online searching requires certain skills, as well as knowledge about the availability and quality of information sources. For effective end-user searching, training will then be essential. This marks a major new area for the expertise of information specialists. It must also be stressed that even if end-users are placed in a position to search for their own information, not all will take the opportunity. There are numerous tasks that people could do for themselves (if they wanted to), for example hairdressing, dressmaking, landscaping, interior decorating and catering - yet we still have specialists for these. It can therefore be predicted with some certainty that not all end-users will want to do their own information searching. It can also be assumed that the greater awareness of the availability of information will increase end-users' expectations of *quality services* and their demands for training and support.

4.7 Information specialists

As mentioned earlier, individual intermediaries should critically consider their own skills and capability for continuing their careers. They are, however, also influenced by the expectations of their profession and particularly by the view of managers of information services, whose views of the future role of intermediaries will naturally be significant. For those who believe that there is a future for intermediaries, a number of new roles are identified - for example:

- Negotiating with database vendors and other organisations which provide access to information. This is done according to the needs of end-users. The negotiations can include the quality of services provided as well as the user interfaces.
- Organising subject access to unstructured information sources (e.g. resource guides and directories of Internet resources).
- Designing Intranets for organisations.
- Providing training and support services for end-users. The need for the continuing education of end-users (e.g. in new developments) is stressed in particular. Information skills should also be taught as part of research processes.
- Getting actively involved in practical research on information retrieval and related services.

- Monitoring the quality of databases and other information sources.
- Working with other role players (such as publishers and information providers) to improve the quality of, and access to, information.

Apart from analysing information specialists as individuals, management of an information service should also be considered since it could do much to influence the direction of disintermediation. If management wishes to secure a future for intermediaries, the following actions may help. Apart from understanding the context of disintermediation, management could

- monitor and possibly influence the organisational culture with regard to expectations of information specialists as well as other employees of the organisation (e.g. encouraging employees to do all their own information searches)
- create a working environment which stimulates awareness of new developments in the online industry, database products and techniques for information retrieval (e.g. do information specialists have access to the latest information in the field of online searching and the services they have to provide?)
- promote a learning organisation (i.e. an organisation which facilitates learning for all its members [including end-users] and continually transforms itself)
- initiate and promote practical research projects, including publications on research results (to improve the services provided, the skills of information specialists, as well as the image of information specialists)
- actively market services and products
- negotiate partnerships with other role players (e.g. computer services, publishers, faculty [if it is an academic information service])
- promote co-ordination between research results (including academic research) and practical implementation
- provide opportunities for continuing education (Harries [1995, 1996], for example, argues for the use of networks for continuing education)

Further reaction will depend on information specialists' self esteem, adaptability and philosophy towards change.

4.8 Other

There are a number of other aspects to consider when analysing the impact of disintermediation in a specific situation, but due to time constraints these are mentioned only in passing:

- technology available to intermediaries and end-users

- financial constraints

For each situation the disintermediation scenario will differ. A careful analysis will, however, enable information specialists to understand the changes and their possible reactions. Likewise, knowledge of their own skills is important.

5 Training of intermediaries

To fulfil the job requirements that go with the role of searching on behalf of end-users, or any of the new roles mentioned here, will require specific training. It must be obvious that the training of intermediaries will have to be reconsidered. Since this paper does not deal with curricula for intermediaries *per se*, only a few of the most important aspects will be highlighted. Training programmes should not merely focus on new developments but should rather stress *how to keep up* with new developments. Programmes must ensure that students use independent study methods to refine their skills. A greater balance between theory and practice is necessary. Of course information specialists should be able to complete practical skills such as online searching, database design and various forms of information organisation. But above all, they should have a better understanding of the theory of their field and of the impact which research results may have on the improvement of their skills and services.

Since there is much support for the teaching role of intermediaries, what needs to be stressed are the teaching skills and the development of didactically grounded training programmes. The evaluation of database quality, the design of personal systems for information organisation, and research about end-user needs are also very important.

In a fast changing environment, initial training is no longer sufficient and has to be supplemented by in-service training and programmes for continuing education. There are numerous possibilities for such programmes, especially if information services and teaching departments join forces and expertise. Since working adults generally find it difficult to attend training sessions, methods of independent study (such as distance learning) should be investigated. Such methods will naturally also provide useful opportunities for the training of end-users.

6 Conclusion

With the advent of the Internet and the increase in both access to and awareness of information, it seems inevitable that end-users will be doing their own information searching. It is obvious that there will be some form of disintermediation. The level and extent of disintermediation will depend on many factors, for example conditions in the wider society, organisational policies on end-user searching, available technology, and the services provided by individual information services. Apart from these, the reactions of individual information specialists and of the management of information services will influence the course of disintermediation. If handled with care, disintermediation could be a golden opportunity for information specialists — but this will require critical self reflection, refinement of existing skills, continuing expansion of new skills, and active research involvement.

Information specialists have always aimed at improving access to information by organising it, and by providing information to their users according to their needs. Services were also aimed at helping end-users to do their jobs more effectively. As end-users' job requirements, their access to information and their need for information changes, there have to be simultaneous changes in the role of intermediaries. This is important for intermediaries who aim to improve society's access to quality information.

If more end-users can take responsibility for their own information searching - or at least some of it - the attention of intermediaries can be directed to other important tasks. End-user empowerment can thus help to secure a continuing role for intermediaries and to promote well informed end-users.

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