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Human Resource Management and the Digital Library

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ABSTRACT

This paper emphasises the role of staff in the development of the digital library and the significant impact of library innovation on staff. The development of the digital library will be determined in various ways by management and staffing issues. Essential elements of human resource management theories and practices are applicable in the library environment: the need to integrate strategic planning with personnel management, the need for new forms of operation and organisation, the need for more flexible working arrangements, job development, staff training, change of management style, decentralisation and greater responsibilities for staff members. The experiences at Tilburg University are described as a case study, with an emphasis on the transformation from a relatively traditional library into a modern organisation that plays a leading role in library innovation in Europe.

Introduction

Libraries are currently undergoing profound changes as a result of the application of new information technologies and the increasing capabilities of end-users to access, retrieve, and process information from their own desktop:

- an increasing amount of information is becoming available electronically
- users no longer have to visit the library if they want to have access to various information sources
- documents can be ordered from other libraries and from intermediaries without any involvement of the local library

- in universities, the use of Internet resources and electronic communications are playing an increasingly important role in education and research.

It is certain that these developments will continue in the years to come and will have even greater effects than we currently can envisage.

The development of a digital library has a profound effect, not only on the users but also on everyone who works for the library, and therefore on the human resource management of the library. The digital library will bring about changes in the tasks of the library, in the relationship with end-users, in jobs, in staffing, and in educational requirements. It will also lead to new management styles and to changes in the organisation.

These changes, and the problems connected with them, are usually underestimated. In the discussions on the digital library, the dominant issues are: access to databases, digitisation, full text retrieval, licence agreements with publishers, the role of the library in the creation of electronic journals, electronic document delivery, classification of Internet resources, user interfaces, user acceptance and user behaviour. Relatively little attention is usually paid to the human and the organisation factors in the library itself as factors that are subject to change but also as factors that can direct and shape the development of the digital library.

In an earlier paper¹, I mentioned a surprising statistic in the literature on the first wave of library automation, i.e., that about 10% of it involved human aspects. "This is strange, if one considers that about 80% of the problems which arise in automation projects are due to problems in the human and organizational aspects of library automation. Obviously, there is a tendency to disregard these questions, perhaps in the belief that these questions are all easily solved." This situation is changing, but still relatively little attention is being given to these issues.

An example is the Report of the Joint Funding Councils' Libraries Review Group. The Follett Report² stressed, with respect to the human and managerial aspects, that librarians will need a broader range of skills and that a national networked training programme for librarians and information scientists working in academic libraries should be established, but gave scant attention to other issues of human resource management.

Human Resources Management (HRM)

As libraries are preparing for change in the electronic environment, we see that many institutions are trying to adapt ideas on human resource management

in their organisation. These two developments do not compete with each other, but rather can support each other.

Many of the studies on "Human Resources Management" use a number of different definitions. Most of them agree that HRM is more than a retitling of "personnel management." Pearson³ defines HRM as a body of theory that would enable better use to be made of human capital, in the interest both of people and of the organisation. Purcell⁴ stressed that "all definitions of HRM agree on one point: that there must be a link between a firm's [*or a library's, Author*] strategy and the development and utilization of the human resource."

According to Timmerhuis and Fruytier⁵, Human Resources Management is the management of the input, throughput, and output of people in an organisation aiming at the continuous availability of sufficient, well qualified and motivated staff. They stress that, as a result of a strategic planning process, it is necessary to identify how many staff members are needed to fulfill (specific) tasks and what qualifications they should have. The optimal linking of people and activities requires deliberate action with respect to selection of staff, staff development, appraisal, training, mobility, and outplacement. This is not a one-way process. The skills, capabilities, and ideas of the present staff can also be an important input for the identification of new goals and new activities.

HRM should not be regarded as a fixed set of tools, as a handbook with clear recipes. I endorse the realistic remarks made by Towers⁶ who wrote that "what really matters to the practitioner is what works. A package of traditional policies and practices allied to some of the more innovative reforms associated with HRM may be more viable than a grand design." A clear and concise statement of the important elements of "human resource management" was given by Singh⁷:

- traditional personnel administration (staffing, rewarding, work design)
- a specific management philosophy that values labour as the major asset of an organisation and that regards human beings as being able and willing to grow and develop
- the integration of the personnel function into strategic management.

The third element means that the personnel function in the organisation should be on the top of the strategic management priority. There is also a need to strengthen the increasing link between the goals and objectives of the organisation and the personnel policy of the organisation. The crucial question is how the branches and the individual members of the organisation can contribute to the realisation of the strategic goals of the organisation according to their possibilities, capabilities, activities, and performance.

This means that the organisational goals which have a priority should be reflected in job descriptions and assignments. In other words: if the individual output of an employee is regarded as a contribution to the accomplishment of the objectives of the organisation, these contributions should be reflected in their jobs. This should be done in close connection with an optimal use of the individual capabilities and motivation of the individual staff members. If an organisation succeeds in doing so, there will be more and better motivated personnel and, consequently, better results.

As a consequence of this approach, variations in rewards based on agreed additional tasks and responsibilities can be implemented. Therefore a system of systematic appraisal of individual employees is required.

A fourth element that I would like to add is decentralisation of tasks and responsibilities to identifiable departments, units, teams, or task groups in the organisation. Decentralisation is not a panacea but a realistic and proven management tool to give staff more space, more decision making power, more trust. This is all needed in order to achieve more involvement and more commitment, factors which are essential for innovation.

Although there are variations in the understanding and use of "Human Resource Management," it is obvious that emphasis on the human factor in the organisation is the most common aspect in various theories and practices. Storey⁸ stressed the "idea that, at bottom, it is the human resource among all the factors of production which really makes the difference."

Libraries and Human Resources Management

Human resources also make the difference in our libraries. Many of the elements of HRM that are being used in various industries and, for instance, in research organisations are applicable in the library environment and provide a better understanding of various processes.

At the same time, we have to be aware of specific aspects which are relevant in the library context:

- Most libraries are traditionally regarded as public organisations, meaning that their services or products are cost free or almost free, which created a specific culture and a historical attitude among library staff in line with this image.
- Libraries are traditionally hierarchical organisations.
- A set of rules, procedures, and standards determine many tasks and jobs performed in the libraries.

- Specific library education is required to work in many library jobs.
- Limited job mobility for the mid-level and lower positions. In many European countries, there is also very limited mobility in the higher ranked jobs.
- A gap between the so-called professional staff and the non-professional staff.
- The funding of academic libraries is generally not based on output or on the delivery of specific products.

Information technologies and the developments towards a digital library require not only changes in these traditional elements and changes in the organisation of the library but also changes for many individuals. In general, the digital library will be given new roles to play or rather a redefinition of roles:

1. A increasing focus on **information management** and on the selection of relevant information, irrespective of where and how the information is stored, rather than on collection development. The shift from ownership to access is inevitable.
2. The provision of **user support** both within and outside the library which is closely connected with a changing attitude towards the users of the library. Increasingly, they are being regarded as customers who gradually have more opportunities to get their information from other places.
3. The organisation of **user training** and user education in optimising the use of electronic resources and on integrating electronic facilities in teaching, learning, and research.
4. The provision of **tailor-made services** to the end-users. These include current awareness services based on defined user profiles, and tools for knowledge navigation which will go much further than the indication of relevant databases or sources, but also aim to provide specific, selected pieces of information from a global environment.
5. Support of **electronic publishing** by researchers of the parent institution. There is a growing need for scholars to communicate and publish in electronic form. Libraries could play a new role in supporting this process by improving the accessibility of this kind of information.

A report on HRM in Academic Libraries for the Joint Funding Councils' Libraries Review Group⁹ indicated that new or changing roles for the library will have important effects on staffing, job requirements, and on the organisation. I would like to highlight and comment on some of the trends mentioned in this report:

- *the need to make strategic plans seamlessly linked to planning for people who will put the plans into effect.*

The Follett Report stresses that this “should be based on an institution’s own information strategy. This should aim to foster integration with other aspects of the institution’s work, and in particular the planning of other resources...”

- *organisational convergence between the libraries and the departments for information technology/computer centres will continue to take place.*

This is not easy since the cultural differences between parts of the computer centre and parts of the library are still significant, although there is, at the same time, an increasingly important overlap between some activities and interests of other parts of both departments or branches. Woodsworth et al.¹⁰ identified various identical jobs in computing centres and libraries: in systems analysis and design, user services and support services. Merging and integrating the two departments does not necessarily mean that there will be a perfect co-operation between people. There are various examples of a more intense co-operation in a situation of two different departments than in a merged environment. For that reason, I would prefer not to emphasise the organisational convergence but would emphasise the need for strategic and operational convergence.

- *professional staff will be expected to play a greater role in learner support and their liaison role with academic departments will become central to their function.*

I support this wholeheartedly. It means that subject knowledge and teaching experiences will be of growing importance for library staff in order to provide tailor-made service, to organise user training and user instruction, and to foster integration of the use of information technologies and electronic information resources with teaching, learning, and research.

- *the need for more flexible working arrangements to achieve greater efficiency and effectiveness.*

Job descriptions will have to be revised, say, every four or five years. The descriptions should be made in such a way that optimal flexibility can be realised. New tasks and participation in projects are of growing importance, in addition to the regular tasks. In the selection of new staff, there should also be a greater focus on people with a flexible attitude.

- *new forms of operation and organisation with a greater emphasis on team work and less on traditional hierarchical forms of working.*

In general, the organisational structure will have to be adapted as a consequence of a process of internal decentralisation of tasks and responsibilities.

- *various types of staff training.*

The HRM Report by Fielden Consultancy determined:

- The need for the development and updating of IT skills and competencies.
- Training in customer service skills and associated questions of interpersonal behaviour.
- Training to support the management of change.
- The need to develop approaches to, and skills in, working in teams within both libraries and converged library/information services.
- Training and associated activities to support quality improvement programmes such as Total Quality Management.

The first types of training are obviously needed in the electronic environment. The last type of training is increasing in importance since the library services are gradually being regarded as products and the users as clients or customers.

In addition to these elements, I would like to emphasise

- an active policy that is needed with respect to job development, staff development, and staff mobility. Long-term goals can be set not only for organisations, but also for individuals.
- the adaptation of management style to this approach. Top management should be aware that they are a dominant factor in this process. They can to a large extent determine the culture in the organisation.
- the involvement of many people within the organisation, according to their level and responsibilities, in the realisation of the goals and objectives.

Some recommendations for HRM in the development of the digital library

Based on the literature (see references 11 to 25) and my own experiences, I would like to make some general observations and give some recommendations:

1. Library management should express their views and ideas regarding the future clearly, define challenging but realistic goals and objectives as precisely as possible, and take concrete steps to implement these plans.

It is advisable to introduce or continue a process of strategic planning for the library and to involve library staff in the planning process.

A strategic plan forces the library to identify its weaknesses regularly in its support of the user and in the dissemination of new services, but also in the organisation and communication with staff. The plan forces the library to make choices. It sets goals and objectives for the coming years, building upon strengths and opportunities, and specifying and clarifying new jobs and organisational changes. People should know what is going to happen, what the changes will be, and how they can best prepare for these changes, for example, by getting additional training. Plans and activities can be linked closely to staff and the need for staff training, staff development, and staff mobility.

A strategic plan is also an excellent opportunity to generate discussion both within the library and with the user community and the executive board of the organisation. It can be a powerful tool to stimulate maximum participation of those involved, which is necessary for the development of the digital library.

2. The goals and objectives of the library should be the basis for a (re)definition of (new) tasks, of the content and description of the various jobs, in a coherent fashion.

Various important changes can be foreseen. In public services, there will be a focus on subject-oriented skills.

The technical department will focus more on electronic information, since managing, cataloguing, and classifying electronic documents and Internet resources will be of growing importance.

Additional activities, such as contributions to projects, which come on top of the "usual" or "traditional" activities can be described in addenda. This can lead to additional rewards on a structural or temporary basis.

3. The management should take into account that new and evolving requirements will be needed with respect to the educational level and skills of their staff and the assignment of staff to various tasks and activities. The digital library will need staff with a proper mixture of skills in:
 - information management;
 - information technology;
 - subject knowledge (according to the core business of the parent institution);
 - and, above all, communication.

In general, a service-oriented approach and a profound feeling for the delivery

of quality in products and services is necessary for all working in the library environment. In most libraries, staff will have to be trained regularly in order to improve their skills. This means that the library should invest in the continued education and training of its staff. A proper plan with sufficient funding is therefore necessary.

4. One of the most critical issues is the need to improve and intensify the involvement of staff and mobilise and make full use of the creativity and ideas of staff in order to realize the organisational goals and to improve job satisfaction. These issues are very much connected with management style and with the organisational concept.

Better staff involvement can be achieved by discussing the new challenges libraries face in an open fashion, by involving library staff in the process of identifying opportunities, goals, and objectives, and in concrete new innovative activities and in various projects, such as the integration of electronic document delivery with interlibrary loan facilities, the cataloguing of Internet resources, the development of an electronic help-desk, and the support of electronic publishing.

Open communication and a lot of attention given to informing people about what is going on is of vital importance for achieving staff commitment and wholehearted staff participation.

Management should take the lead in decentralising tasks and responsibilities. In general, the organisation will be flatter, less hierarchical, and will have shorter lines of communication than we used to have. The use of electronic facilities such as electronic mail and electronic conferencing will make this not only inevitable but also easier to accomplish. It is now easier to inform people, to gather their ideas and suggestions, to organise the debate, and to create commitment. The next step will be to transfer more decision making power to working groups and project teams.

I will now discuss whether or not many of the general theories and ideas mentioned above coincide with our experiences at Tilburg University in developing a future-oriented library, stressing the specific problems we faced and the resulting personnel policy.

Personnel policy and experiences at Tilburg University

In analysing seven years of work on the development of a digital library at Tilburg University^{1,26,27}, I identified three important phases of problems and challenges with respect to human resource management and changes in the library organisation:

1. The initial period from 1984 to 1991, in which the library was prepared for change and gradually transformed from a relatively traditional library into a modern innovative library that focused on the provision of electronic services. In this period, there was a gradually evolving conflict between **tradition** and **innovation**.
2. The period from 1991 to 1994, in which the key issue was to find a proper balance between **consolidation** and **innovation**. In this period, it was necessary both to consolidate the results of various projects and to start new projects and take new innovative initiatives.
3. Currently, the main problem is a tension between **organisation** and **innovation**, between (staff with) tasks with a creative and innovative impact and (staff with) tasks which primarily focus on highly regulated and repetitive activities.

From a traditional to an innovative library

From 1984 to 1991, the main challenge was to **change the organisation** from a library that at first had focused primarily on the automation of internal library processes **into** a more user-centered and **innovative** facility that focused on the provision of electronic information to the users.

The basis for this change was the ideas and vision of library management, in which my predecessor Leo Wiers played a very important role^{28,29}.

This change was achieved through various initiatives:

1. From the very start, staff were encouraged to improve their skills and qualifications. As early as 1984, the management stressed that many tasks and jobs in the library would change in the years to come. An outline of the forthcoming job development was presented and staff were asked to consider their roles in the library of the future. If they wanted to play a role and if they wanted to get better or other positions in the library, they should invest in education.

This policy was accompanied by an active educational programme with an annual budget of Dfl.45,000 – 50,000 between 1984 and 1992. In addition, staff got the opportunity to spend 10-20 % of their time on attending courses and seminars. The total staff number increased from 48 full time employees in 1984 to 60 full time employees in 1992. In this period of innovation and expansion, 41 staff members (of which 33 people are still working at the library), opted for further education. Some staff, however, decided not to invest in education but opted for early retirement.

2. An innovation programme started in one unit of the library, *Excerpta Informatica*, and the experiences there were carried over to other departments. At the same time, this unit served as a breeding ground for further innovative projects.
3. The organisation of the library was changed fundamentally. The first major change focused on the creation of subject-oriented information teams which could liaise with the faculty and provide tailor-made services for teachers and researchers.
4. Gradually, more staff were involved in innovative projects.

In 1989, the university library set up about ten project teams in the framework of our innovation programme. Thirty-five library staff members participated in these teams.

As there was a firm policy to rely on our own staff, various staff members were partially replaced in their regular jobs making it possible for them to participate in new projects. In this period (1989-1992), the project activities differed completely from their regular jobs.

Consolidation and innovation

From 1991 to 1994, the key issue was finding a proper balance between **consolidation and innovation**, between the going concern, the running of day-to-day services to users, and the need to consolidate the results of various projects on the one hand, and the need to continue our efforts to innovate library services and proceed in the direction of the digital library, on the other hand.

This tension is, of course, a well-known phenomenon in all innovative organisations. No truly ideal solution has ever been found in any of these organisations, but one can try to minimise the problems as much as possible.

Some of the measures taken in Tilburg for coping with this tension were:

1. Making results of projects available as soon as possible in the regular organisational line and making staff of the standing organisation responsible for the new service.
2. Creating a flat and simple organisation consisting of three departments in line with the strategic goals of the library.

One department was created for automation and systems development, including cataloguing and acquisitions. This department has responsibility for the maintenance of library systems, technical support of library staff, and the development of new library applications in cooperation with the computer centre. In this department, one of the most innovative parts of the library was merged with one of the most "traditional" branches.

The second department focuses on user support and is primarily focused on users who actually visit the library building and use the facilities on the spot. This department includes help desk activities, interlibrary loan, and document delivery.

The third department deals with collection development, information management, user instruction to students and faculty, and the provision of tailor-made services both to internal and to external users.

This whole reconstruction implied a fundamental organisational change.

3. Making innovative activities part of as many of the regular jobs in the library as possible. Examples of this policy are the documentalists and information specialists who are assigned to support the staff of the Faculty of Economics. They are deeply involved in the development and maintenance of a database that provides electronic access to research papers produced in their faculty. Other documentalists are involved in maintaining and developing special library databases in their subject area and in customising relevant Internet resources.
4. Continuing the formation and implementation of working groups and project teams and involving people from more than one department. As opposed to the criteria used in the period from 1989 to 1992, the participants were chosen because of their specific professional contributions, which were very much connected to their regular jobs. This was possible since the content of the "regular jobs" had changed as indicated above.

Currently, twelve different project teams, partly based on external or additional funding, are operating with an involvement of about 20 different staff members.

A flatter organisation

The second major organisational change must be discussed in greater detail. As a consequence of the innovation process, we eliminated single and sometimes multiple layers in the organisation in order to make lines of communication shorter and give individuals more responsibility. As a result, the organisation became flatter. The electronic environment and the information and communication facilities available are creating new patterns and networks in the library and this, in turn, has led to the demand for a more participatory management style.

In innovative projects, it is perfectly clear that the old methods do not work anymore. Baaijens, who did research on various innovation processes, and in particular the library innovation at Tilburg University³⁰, stressed that such groups need relatively short and clear communication lines. Complex automation projects require a simple operational organisation: decentralisation in conjunction with effective communication with top level management.

This is, of course, not a phenomenon that is limited to Tilburg University.

In the realm of library management, the necessary shift in organisation is difficult as libraries are traditionally bureaucratic and hierarchical organisations with a top-down, authoritarian management style. Libraries must gradually move towards a more democratic style of management. A balance should be found between the need for more staff involvement, a kind of anarchy in order to stimulate new initiatives, and the need to take clear decisions which cannot always be based on general agreement.

Organisation and innovation

Currently, the main problem is a tension between **organisation and innovation**, between a majority of tasks with an increasing accent on, and with ample opportunity for, creativity and innovation and tasks in the provision of basic information services and administrative support. These tasks are of crucial importance to the library but are highly repetitive, controlled, and regulated and follow a daily routine. The employees (mostly "non-professional staff" in the UK context), carrying out these tasks usually do not get credit for new projects and innovative successes, but they create the foundation on which the whole operation is based. They determine the image of the library. If they do not do a proper job, other library activities and facilities could easily remain obscure.

In 1996, a user study was conducted on the services provided by the computer centre and the Tilburg University library³¹. One of the interesting results of this study was that students greatly appreciate the computing facilities and electronic services, but regard the staff of the library and their performance as the most important category. The support, skills, and attitude of staff is the most important factor that determines the performance and appreciation of the library from the students' point of view.

This affirms that we should focus not only on new and better electronic services and facilities but also on the performance and sense of well-being of staff.

Specifically, we should attempt:

- to make the content of these jobs more interesting
- to involve more of the “desk” staff in user instruction, IT support, and WWW activities
- to ensure that all staff members increase the creative portion of their tasks to 15 to 20% of their total workload
- to make the organisation flatter in this area
- to have a more communicative and participatory management style focusing on motivating people, but also
- to be more specific towards staff in creating expectations with respect to staff development, opportunities, etc
- to foster a quality awareness amongst staff and a continuous improvement of performance.

I am not sure, however, that these measures will prove to be “the” solution to this important and complicated problem. The general situation is that the electronic library offers many more interesting jobs than the traditional library can offer, but it can also create a wider gap between “professional” and “non-professional” staff and may “de-skill” some jobs that were originally the core of the library organisation.

An overview of changes in qualifications of staff

As a result of a deliberate educational policy, the qualifications of the library staff improved significantly:

	<u>1984</u>	<u>1995</u>
a.University*	11	19
b.Library School	12	25
c.Computing/Applied Computer Science courses	0	10
d.Special Library courses (Information Specialists)	18	27

* Including staff who graduated and staff who took university courses for one or two years.

An overview of changes in staffing

The most important changes in the attribution of staff to the various activities in the library between 1984 and 1995 were:

- the employment of 19.7 full time documentalists and information specialists in 1996 compared with 4.5 full time employees in 1984, and
- the creation of an “automation unit” and a help-desk with 6.8 full time employees in 1996.
- the number of staff in the acquisitions and cataloguing department decreased from 11.5 full time employees in 1984 to its current 7.4 full time employees

At the same time, the job content in this department changed. For example, the cataloguing of electronic documents is now one of the tasks of those employed in this department

Conclusion

Human resources are the most important resources of the modern library.

A digital library will be developed by people. The creativity, ideas, and efforts of staff are the determining factors. Library management will have to invest in the continuous education of staff and will have to develop a coherent human resource policy, including staff development plans. It is also clear that the old way of running the organisation will have to change in order to give more responsibilities and more decision making power to more people in the organisation. This will be needed in order to achieve organisational goals and to create more job satisfaction.

In time, this will make the digital library a more democratic library and a more pleasant and exciting environment in which to work.

References

1. Geleijnse, H. and Grootaers, C., ed.; *Developing a library of the future: The Tilburg Experience* (Tilburg University Press, 1994)
2. *Report of the Joint Funding Councils' Libraries Review Group* (The Follett Report), HEFCE, Northavon House, Coldharbour Lane, Bristol BS6 1QD, 1993
3. Pearson, R., *The Human Resource: Managing people and work in the 1990s* (McGraw Hill, 1991)
4. Purcell, J., Corporate strategy and its link with human resource management strategy, in: *Human Resource Management*, ed. by John Storey (Routledge, 1995)
5. Timmerhuis, V. and Fruytier, B., *Human Resources Management in R & D, HRM-Rapport 1*, (IVA, Instituut voor sociaal-wetenschappelijk, Tilburg University, 1991)

6. Towers, B. ed., *The Handbook of Human Resource Management* (Blackwell, 1992, new edition 1996)
7. Singh, R., Human Resource Management: a sceptical look, in: *The Handbook of Human Resource Management*, ed. by Brian Towers (Blackwell, 1992, new edition 1996)
8. Storey, J. ed., *Human Resource Management* (Routledge 1995)
9. *Supporting Expansion, A report on Human Resource Management in Academic Libraries*, for the Joint Funding Councils' Libraries Review Group by John Fielden Consultancy, July 1993 (Revised September 1993). Supporting document to 2. The Follett Report, also available from HEFCE.
10. Woodsworth, A. with Detlefsen, E. ed., Managing Human Resources in Research Libraries, *Library Trends*, **41**(2), Fall 1992
11. Martin, S. K., Library management and emerging technology; The immovable force and the irresistible object, *Library Trends*, **37**(3), Winter 1989
12. Klobas, J.E., Managing technological change in libraries and information services, *The Electronic Library*, **8**(5), October 1990
13. Gorman, M., The Academic Library in the Year 2001: Dream or Nightmare or Something in Between? *The Journal of Academic Librarianship*, **17**(1), pp 4-9, 1991
14. Dyer, H., Anne Morris, and Margaret A. Rohdy, *Human Aspects of Library Automation*, (Gower, 1996), reviewed by Trudie A. Root in *The Journal of Academic Librarianship*, **17**(2), p103, 1991
15. Rubin, R.E., *Human Resource Management in Libraries, Theory and Practice* (Neal-Schuman, New York, 1991)
16. Johnson, P., *Automation and Organizational Change in Libraries* (G.K.Hall, Boston, 1991), reviewed by Allen Bryce in *Information processing and management*, **28**(4), p531, 1992
17. Corbin, J., Technology and Organizational Change in Libraries, *Library Acquisitions: practice and theory*, **16**, 1992
18. Smith, K., Towards the New Millenium: The Human Side of Library Automation (Rev.), in: *Information Technology and Libraries*, June 1993;
19. Steele, C., Millennial libraries: management changes in an electronic environment, *The Electronic Library*, **11**(6), December 1993
20. Corral, S., *Strategic Planning for Library and Information Services*, (Aslib, 1994)
21. Edwards, C., Day, J.M. and Walton, G., IMPEL Project: The impact on people of electronic libraries, ELVIRA 2 – Proceedings of the second Elvira conference (Aslib, 1995)
22. Breaks, M., Managing new technology in a university library, *The Law Librarian*, **26**(3), September 1995;

23. Jordan, P. with Jones, N., *Staff Management in Library and Information Work* (Gower, 1995)
24. Jordan, P. with Jones, N., *Staff Management in Library and Information Work* (Gower, 3rd edition, 1995) reviewed by Sheila Corral in *Journal of Documentation*, **52**(1), p118, March 1996
25. Harbour, R., *Managing library automation* (Aslib, 1995) reviewed by John Knowles in *Journal of Documentation*, **52**(2), p209, June 1996
26. Roes, H. and Geleijnse, H., Library Innovation: Experiences at Tilburg University, in: *Encyclopedia of Library and Information Science*, Vol 58, Suppl. 21, 1996;
27. Geleijnse, H. and Gregoire, J-P., Personeelsmanagement in de digitale bibliotheek, *Informatie Professional*, **1**(1) 1997.
28. *The New Library and the Development of Innovative Information Services at Tilburg University*, (Tilburg University Press, 1989).
29. *Documentation, Information and Communication at Tilburg University: Plan of Action – Research – Services*, ed. by Wiers, L., (Tilburg University, 1990)
30. Baaijens, J., Informatisering en organisatieverandering, *M & O: tijdschrift voor organisatiekunde en sociaal beleid*, **49**(3) 1995, pp183-201
31. van Welsem, A., *De klant als klankbord, Evaluatie van de dienstverlening door bibliotheek en rekencentrum van de KUB* (Thesis, Tilburg University, unpublished, 1996)

Notes

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