
Financial Management of Libraries: Past Trends and Future Prospects

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ABSTRACT

THE GROWING ALIGNMENT OF INFORMATION SERVICE MANAGEMENT to business-based models of management since the 1970s is evident. The impact of the information and communication technologies (ICTs) on all areas of information service management is bringing about further structural changes and adjustments to practice. The financial environment within library and information services is reviewed and a structure for financial management is presented based on funding source and level of commercial activity. A set of criteria for library resource and service management based on Maurice Line's proposals is reviewed and these are critically appraised against the parameters of the business and financial models discussed. A good fit between Line's principles and business and financial parameters is found. A discussion of macroeconomic factors and contemporary trends is offered. A set of objectives for financial management of library and information services is developed and reviewed in the light of future trends and stakeholder perspectives.

INTRODUCTION

During the last twenty years there was a growing trend to align library and information service management to business models of management. In the late 1970s business conditions were rapidly evolving in response to changes in economic thinking. Monetarism and its political children Reaganomics (in the U.S.) and Thatcherism (in the UK) reinvigorated the debates about taxation, investment, and public spending. Market forces, the role of markets, and competition were given new prominence and interpretations. The roles of the consumer and customer in society and in com-

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merce were highlighted. Efficiency, the elimination of waste, and quality delivery were new watchwords. The role of central government, economic intervention, and balances between public and private sector activities were analyzed, criticized, and redefined. In short, the deregulation of economic activity was to be the favored means of ensuring growth and wealth creation. This cycle of change would inevitably come to affect every sector of economic activity including library and information services.

The recent historical record, and indeed contemporary events, show that the library and the information sector has had to face a changing and ever more turbulent environment since the late 1970s. Rising library materials price indices were amongst the first indicators (e.g., well summarized in Cummings, 1992). Mid-1970s inflation—a symptom of rising oil prices—affected all economies tied together by global trade and against this background the new ‘economics of the right’ found its moment arriving to challenge the post-1945 Keynesian consensus.

Today’s economic and business climate is still influenced by these changes observed first during the 1970s in the U.S. and UK. The substantial dependency of the professional library and information area on public sector funding was to prove a considerable disadvantage. The virtual entirety of public libraries in the U.S. and UK were then, and still are, dependent on local or central public finance. These major sources of revenue were constrained as a result of these political and economic changes because the reduction of public spending was one of the major goals advocated. Likewise, academic and research libraries in the UK were and are virtually all publicly funded; in the U.S. private funding plays a greater role for research libraries, even though public funding is very significant for many.

In a perverse way, with hindsight, and from a library and information standpoint it could be said that the economic environment over the last twenty years has been both a negative force and a stimulus at the same time. Constraint on public funds and a shift to an enterprise culture undermined the welfare tradition of social provision. But it also encouraged a climate of innovation and so gained new potential and momentum. Little by little these library and information services have begun to explore markets and commerce, new customer sectors, added-value services, and new managerial responsibilities. They have discovered, albeit through a painful process, that public obligations can be sustained and innovation and adaptation engendered at the same time.

Against this background lies the justification for this paper. Given that financial management can be considered as a body of principles and practice with a close relation to applied economics, a review and discussion of financial management is an appropriate theme for this special issue on the economics of libraries: theories, measurements, costs, and related issues. Our period of study unfolds against a background not only of new economics but also of new technologies.

We can also observe that the post-1980s applied economics of the library sector is now giving way to a new economics which has to reflect the incorporation of the information and communication technologies (ICTs). Fresh organizational responses requiring business models hitherto unfamiliar are now indicated. What was public not-for-profit enterprise is not yet really (and perhaps never will be) private enterprise, but it has nevertheless undergone some radical rethinking and real changes in practice.

In the 1980s the author was an advocate of a more vigorous approach to the use of financial management tools (especially cost measurement and management) in library and information service (Roberts, 1985). By then, especially in the U.S., there had been a strong injection of business thinking applied to libraries but it met with some apathy as much as resistance in professional practice. This paper will make a review of progress over the last twenty years and look forward in a strategic manner to the future. Whilst the alignment of library and information service management to business models of management has continued, the rate of innovation has been uneven. Yet, there was enough impact in the 1980s to soften the blow for the adaptation that was to come in the last decade. A review may reveal trends and practices which still have to be absorbed and addressed.

With the arrival of the digital environment in the mid-1990s and the emergence of the hybrid library model, new managerial and financial needs have arisen as the environment of library and information service has become more complex. To what extent has current practice learned the lessons of the past so that it is well equipped to deal with future needs? Digital collection management, access policies, information marketing, public-private sector relations, converged services, and paradigms such as knowledge management provide areas of case study for a continued debate about library and information economics and financial management.

The paper will seek to clarify and reaffirm theory, but will also try to elicit the practical consequences and indicate how managers and other stakeholders can respond. Some observations regarding contrasting trends and practices in the United Kingdom, Europe, and North America will be made. The wider impacts and ramifications in other regional settings will be noted.

THE CONTEXT

In delimiting the scope of financial management, the operational context and setting of application play an important part at any and every level. Historically, the organizational setting of library and library-derived information activities in society has been both a characteristic and a potent financial delimiter. Professional growth and identity have been formed around the emergence of characteristic sectors of library and information activity. The public library emerging in the mid-nineteenth century was a social and civic activity deriving legitimacy and resource from public taxa-

tion and expenditure. Mass education at all levels expanding in the same moment shared this heritage, and even where private initiative and charity played a significant part, the welfare motivation was strong. Private benefactors endowed personal resources for some ultimate public good. Only a very small proportion of library-based activities were developed as commercial, risk-bearing enterprises that sought private gain through profit (commercial lending libraries had a certain heyday in both the U.S. and the UK in the first half of the twentieth century).

Although industrial and commercial enterprises established and promoted library and information centers to meet their needs (special libraries) they did so as an internal diversification of their organizational activities. They could be regarded as a fixed-cost overhead and their financial implications and needs were limited. Commercial activity in the information sector (as defined today) was confined to publishing and the emerging mass media of press and magazines, whose survival was determined by profit and loss.

The core of the emergent library sector and profession was firmly in the public sector. The financial goal of these agencies was to spend money raised by some other agency (public taxation filtered through treasuries nationally or locally) for public good. Their great financial distinction and saving was that they were noncommercial and not-for-profit. Their financial responsibility was to be able to control and account for their spending. They were essentially welfare dependents.

The history of library management and its financial component was considerably determined by organizational status. In turn this seems to have shaped library manager needs for financial management technique and governed the nature and pace of practice and innovation. Four basic sectoral types can be identified presently: the library sector, the diversified library and information sector, the emergent markets for information and knowledge management (with an organizational and technological basis), and the wider applications of ICTs. These four can be regarded as the professional business models, to distinguish them from the managerial (enterprise/commercial) business models. These professional sectors have each generated new needs for financial management techniques and developments in practice have indeed taken place. These movements and trends have had a part to play in forming the present discussion.

If professional librarianship emerged in the 1850s there was a period of 80 to 100 years before a major transformation occurred. Between the 1930s and the 1950s professional librarianship was slowly coming under the sway of scientific management, most notably in the U.S.. This trend had barely arrived in the UK by the 1950s but then it too accelerated there. Professional writing on costing, accounting, and related matters for library and information services started to appear in the 1950s and 1960s.

When the author published *Cost Management For Library and Information*

Services in 1985 (Roberts, 1985), there was much to write about, papers to read and cite, as well as a context for activity in the U.S. and the UK as well as Germany. An analysis of the 485 references listed in the expanded second edition of this work (Roberts, 1998) provides an indication.

	Pre-1968	1968-1984	1985-1997	Total
Cost Studies	21	178	61	(260)
Broader Financial Management	9	111	105	(225)
Total	(30)	(289)	(166)	(485)

The 1985 study was based on a thorough search for material published in English up until then (core studies of methodology and well-reported and disseminated case studies). There is a sharp rise in published studies after 1967 up to 1984. In the period up to the second edition there is a marked decline in like-for-like studies. Broader studies (planning, budgeting, financial studies in general) continued with similar prominence. No definitive bibliometric claim is made from this evidence (although inclusion criteria were similar in both editions) but it could indicate a steady concern and interest in the general theme, which is not backed up by a growing number of published empirical studies. It could suggest a need for further empirical studies, although there is no good way of assessing the numbers of in-house studies carried out but not reported. In reality the number of "broad" studies is likely to be much more, because financial matters are increasingly referred to in policy and macro-studies (e.g., charging and pricing, impact of the ICTs, networking, and cooperation). The information and economics literature is probably outpacing that on financial management more specifically.

Over the last twenty years some tentative theory and empirical evidence have been developed. An intellectual pattern for the study of financial management in the library and information sector has at least emerged. Just how adequate a basis this provides is the next theme to discuss.

FINANCIAL MANAGERIAL ENVIRONMENT

What is financial management? Essentially it is one of the functional processes of the managed organization. At the root of the definition are the three aspects of sourcing, deployment, and utilization of monetary resources in direct or surrogate form. As such it is a formal responsibility likely to be undertaken as a specialty or generally by managers and related staff. The ways in which they undertake these functional processes in the organizational context constitutes the financial managerial environment. This managerial environment has a specific internal organizational setting and a wider setting (external to the organization).

The concepts and aspects of sourcing, deployment, and utilization provide a basis for defining specialized managerial roles. These aspects show

operational variation under different conditions. The different conditions are represented by different managerial business models and their professional counterparts (discussed in the next section). Part of the analysis must be to look at the appropriateness of different managerial business models for fulfilling library and information service goals (within the overall professional business model with its four main sectors). In strategic organizational terms there should be a general fit between the appropriate managerial business model and professional service goals. This is proposed as a working hypothesis.

Nevertheless, a consideration of the evidence of practice indicates a need also to consider the nature of adjustments and realignments between the business and the professional models. There is a view that the last thirty years of practice have seen substantial change and adjustment in the financial and business models of library and information services. The question to be put is whether or not the financial managerial environment has reached a state of optimization with respect to the interplay between the business and professional aspects of the model? In the light of likely anticipated developments (most of all in the shift to a hybrid and digital information economy) it may be prudent to regard existing arrangements as suboptimal. Hence, the concern with likely future developments. Is the future model likely to be the continuing evolution of present models or is something radically different likely to emerge? Put another way: will the professional models have to transform more radically than the business models?

To return to the financial responsibilities, sourcing of capital, current revenue, and income streams is the classic responsibility of the financial manager (the director of finance in the commercial organization; often a professional postholder in a library). Assuring income and capital is to assure the survival and growth of the organization and provides the key to establishing and maintaining its value. This is a strategic function operating at Board and CEO level. Much of the detail in the sourcing function is the concern of financial accounting drawing on systems of responsibility accounting. Being publicly grant-funded does spare the library/information manager from the difficult and risk-laden tasks of sourcing capital from the market; so much the better some think, if they too have few revenue-raising responsibilities.

Deployment of finance is essentially the task of planning and budgeting. In the commercial organization these functions are rooted in financial strategy (debt/equity ratio, debt structure, and dividend policy) and interrelate with sourcing. Budgetary planning and management are classic responsibilities which cross over the strategic and substrategic levels. A strong managerial economic aspect is exercised in the deployment function to deal with the analysis of choices and economics-influenced decision-making. Ideally, the library and information manager should be as deeply

involved as his enterprise counterpart in this function. In reality this may not be mandated by the role itself or the host organization. Examination of the professional literature has indicated that the tools are less well-developed and applied than they might be. Professionally, the U.S. practitioner tends to be better equipped to perform the task than the UK counterpart. An enterprise and market tradition, preference for analysis over pragmatism, professional norms, and bigger and more managed organizations may explain some difference. These themes would make worthwhile and interesting inquiries!

Utilization is the operational phase of the planning and budgeting cycles. Financial process management is devolved to operational levels and control and performance tasks take on great importance. Cost measurement and cost accounting are primary concerns and management information is generated through process systems. Information is collected together for fuller responsibility and financial accounting and is then redeployed to the strategic level of management for review and action. The two most detailed monographs on accounting and costing for libraries originate in the U.S. (Snyder & Davenport, 1997; Smith, 1998). The author's own UK work (Roberts, 1998) covers the ground under the overall rubric of financial management. Historically, the key works of this literature came from the U.S. Nevertheless, more specialized work was undertaken in Germany (Beyersdorff, 1978; Koch, 1985) and the practical tradition of management-based empirical studies within Aslib in the UK need mentioning. It can be argued that financial utilization runs on into studies of performance and evaluation. Both the U.S. and UK have been innovators, although the U.S. provided much inspiration (King & Bryant, 1971; De Prospo et al., 1973; Lancaster, 1977). Cost-efficiency, cost-effectiveness, cost-value, and cost-benefit studies also feature in all these studies. Questions of financial resource and value will remain high on the agenda. It is perhaps ironic that professional interest in these aspects has not always run to improving the organizational and managerial foundations of costs, data, and management information on which such studies rely.

Financial management and physical resource management in the modern managed organization are inextricably bound together. Physical resource management (e.g., document collections, technology-based systems, equipment, accommodation and estates, as well as human resource management) all require their own levels of speciality [often related to logistics (allocation, storage, movement), safety, social, legal, political, human, and cultural factors]. Nevertheless, the managed physical resource usually has a financial or economic consequence and/or value which may be explicit or implicit.

The interplay of financial and operational conditions is very familiar to library and information service managers, and especially with reference

to document and information collections. It poses characteristic questions of prices, costs, and values familiar to these professional managers in libraries. Acquisition costs and collection operating costs may bear little relation to information content value and/or user valuations of the same physical stock, which when unresolved lead to classic disputes over weeding and relegation.

Within the new digital information economy the finance and economics of the material forms (a one-to-one relation between materiographic formats and content) is giving way to one-to-many and multiple forms of content and service with no need to transfer format for access, or ones which dispense with format/content boundaries altogether. Information is reduced to digital data which can be reconfigured through software to provide the information in the same, enhanced, or varied form, which can also be linked to other data and information and redistributed.

New forms of 'classic dispute' are emerging with the new information media having to do with rights to intellectual property, reprography, copyright ownership, seller and buyer rights, access regimes, subscription value, and licensing of access. Behind these 'new classic' disputes are the old economic and financial constraints in a new guise. Some already believe they may pose a threat to information access. If this is true, then a good understanding of the economic and financial environment is essential for future managerial success.

BUSINESS MODELS AND FINANCIAL MANAGEMENT

A business model is a set of structures, processes, and behaviors which constitute the predominant means of achieving organizational goals. In this section we leave behind the contrastive definition of the business enterprise model and the professional sectoral model. Instead we cross the range of public to private domains, and offer a typology of possible business models (A)–(J) based on financial resourcing as the dominant criterion. The business enterprise (commercial managerial) model is concentrated almost entirely on the final class (J) (commercial for profit/loss), although some privatized public utilities operate commercially with public subsidy.

Library and library and information sector organizations operate substantially within the first seven classes (A)–(G). In theory and practice information and knowledge management services can be undertaken in all classes. The ICTs have a similar range of classes but in practice their extensive use has depended on commercial innovation for rapid leading-edge exploitation. The typology helps to clarify the direction in which financial management has to have a distinctive priority as the range is crossed. If this typology is applied in practice (another future research study) it will be observed that some library information providers need to bolster financial management, especially at the deployment and utilization stage.

Business Models

Grant-funded (A) organizations are entirely dependent on their (external) grant provider as the source of revenue. Grant-funded through internal allocation/overhead (B) organizations depend on their host organization as the source of revenue.

Grant-funded with simple revenue earning (C). The grant provider—of either type (A) or (B)—is by far the dominant source of revenue, but allows the organization to earn marginal revenue without loss of grant income.

Grant-funded with internal market (D). The grant provider or host organization still provides the bulk of funding, but internal users may pay variable overhead contributions according to levels of use or need. This model allows some scope to make efficiency gains; it provides the delivery of a basic level of service and differentiated/added value services at additional cost.

Grant-funded with commercial trading (E). As a development of model (C) this type of organization may set increasing revenue-earning targets. At certain levels of earning more rigorous financial managerial conditions are required.

Business unit (strategic overhead in commercial organization) (F). This type is model B in a commercial setting. As a strategic overhead the unit is vital but at the same time has to pay its way in terms of efficiency levels and corporate value added.

Business unit (market tested) (G). Model (D) can be developed to provide service to an internal market and to move towards free-standing operations. Grant and overhead revenues are bid for through internal competition. This model could operate in a zero-based budget environment. Sources of income are released in exchange for specific service commitments. This type of unit is, in effect, the internal unit 'contracted out'; it implies that the unit is competitive and could be substituted by another provider (offering the same service for less money or better service for the same money).

Commercial with public subsidy (contracted out) (H). In the UK and some Western European countries this model has been the end result of privatizations of public corporations. For example, privatized rail services have operated under this model notably in the UK, but with opinions varying as to their success. The commercial provider is contracted to meet a public service obligation. The model has also been used for highway infrastructure provision. The model also underpins the discussion and politics of public/private partnerships, where the objective is to regenerate public services using private sector expertise and the financial markets. In the UK this approach is sometimes viewed as the evolution of the Thatcherite—New Right model. It is sometimes referred to as the "Third Way," implying the delivery of social provision (combining equality, compassion, and obligation) with efficiency and best value delivery.

Commercial for profit (and loss) (J). This is the model associated with market freedoms and enterprise: it is the traditional business/financial model of the private sector. Between the financial independence it portrays and full dependency (type A) there are seven variations.

Application of Models

How do the financial deployment and utilization aspects fit into any given sourcing model? Essentially there is no difficulty incorporating these two aspects, once it is realized they are dependents of the sourcing regime. In practice the development of these aspects increases in intensity and scope along the spectrum of grant-funded to commercially funded. It is the intensity of commercial (and managerial) activity that drives the financial management regime in any given setting.

As the necessity for financial management theory applied to library and information activity increases, the greater the level of commercial and market activity. In the commercial and market environment the base assumption can only be one of total uncertainty: financial management technique seeks to reduce uncertainty. Financial sourcing in this setting is derived from borrowing (under conditions of risk of default on loan) or current and future revenue streams (dependent upon market success). Reputation and competitive strength are clearly important in balancing likely risk and reward functions, and determine financial soundness and probity of the organization. Market economists hold these conditions to be stimulating and the best drivers in allocating scarce goods to ends. Even if information is sometimes economically nonscarce the resources that permit its managed distribution are scarce. The economics of information is conceptually problematic (see Boisot, 1998, for example) but its transfer from source to user is a transaction more akin to mundane commercial activity, whether publicly or privately financed.

But the application of financial management theory is affected by another decisive element: that of private goods versus public goods. The same information can be both a public good (available to a wider number at marginal cost) and embodied in a product as a private good (with a scarcity value reflected in cost and price). And the same piece of information can be maintained socially as a private good and also commercially exploited (see Kingma, 2001, for an accessible discussion).

The commercial enterprise has evolved in such a way as to become associated with the markets for private goods and products. Profits can be made as a reward for negotiating and overcoming uncertainty and risk. Normally, welfare/public goods supply has been associated with public agencies who have not had to operate commercially for profit, and who are able to operate outside the tightest discipline of the market; they can survive on financial losses if there is a public interest to be served and an ultimate source of funds. Needs and equitable distribution are the operational criteria. Any

loss is considered for subsidy should it still be desired. The public agency and treasury is the provider of last resort. Of course in the real world public agencies have more and more come to understand the value of respecting market disciplines (in the interests of efficient and stable government).

The consequences of information itself (and by extension information service) as potentially both public and private goods is a condition that somehow has to be squared with economic and financial reality. The nine business models (of financial sourcing) reviewed above reflect this problem quite clearly when real library and information organizations are matched against the model types. Grant-sourced organizations almost exclusively carry out public/welfare good provision whether for social, cultural, or economic reasons. On the continuum of grant-sourced to commercial organizations we can observe the gradual introduction of trading activity to replace public grant with market-derived revenues. In the last thirty years the number of gradations of models necessary to accommodate the variety of settings has increased as a response to structural and secular change as well as political preference, new opportunities, and technologies.

As the ICTs are now the most potent source of change in the library and information environment it will not be a surprise to implicate them as a driver of future financial managerial changes. But there is a history to consider too. In the U.S. and UK in the 1980s there were many debates about the future of public libraries and their function as much as their financing. Facing up to this debate was very important even if at the end the historical principles of public libraries as public goods seem to have been maintained. The purpose and funding of academic and research libraries has been similarly debated in the U.S., UK, Germany, and Australia to name but a few centers. The similar public good and welfare status was maintained.

But will it always be like this? A debate followed by a reaffirmation of the tradition? The debate on the financial managerial impact of the new technologies has been going for a decade at least. In collection management, the impact of electronic journals and now of digital and hybrid libraries are becoming clear (Cummings et al., 1992). We reserve this discussion for the closing part of this paper, but its kernel may focus around the relative aspects of information as public and/or private goods.

PAST AND PRESENT PHILOSOPHIES

So far the discussion has evolved around a conventional management axis. An analysis of organization development and financial management has resulted in a typology of business models by revenue sourcing. Future reform of practice could be achieved by locating a given organization within the typology (on intensity of need for and practice of financial management) and deciding to intensify (or possibly relax) the processes applied. First of all, to what extent has this taken place in the past?

Over the last fifty years an erratic yet persistent reform has been taking place. Library and information services seem to have been working towards a future model of rational organization and management. But the 'normalization' of library and information service management has been a game of catch up. Experts are more, rather than less, certain of the forms of rationalization, although the impact on practice and the academic discussion are still ragged and unresolved.

The predominance of grant funding has protected services from market rigor and shielded them from the stimulus of the market although often keeping them short of revenue. This may have been entirely good political economy. But, if it had been otherwise, society may not have enjoyed the obvious benefits delivered by great library resources and high levels of welfare provision. But, can the trend be continued when the future seems to promise so much change?

But pivoting around the infant years of the twenty-first century makes it pretty clear that a new economic (if not financial) perspective is being unveiled. Financial management (and its microeconomic environment) is largely focused on the inner world of the organization and its essential links to external reality. However much the inner world is perfected (by matching the business to the financial model) it is the external world/environment that provides the challenge. Where organizational financial management was once seen to provide a summative paradigm, the determinant in the future is going to be external and economic and more specifically macroeconomic.

A sufficient understanding of financial management in the organization is going to have to be matched with an enlarged understanding of the external environment and market. In essence, the well-founded library and information service has to fully comprehend the variety and complexity of its enlarged (even global) information marketplace. Striving to understand user behavior was once mainly a task to understand local users who had few choices other than to use your immediate offer to satisfy their needs. Now users not only have potential global access to information content but also to competing alternatives and services. Your service monopoly has been undermined or reduced. Now you have to compete and retain users by virtue of your offer and attraction. Because sooner or later their desertion to other providers will show up very clearly within your strategic financial model and at every point through the process model (by declining usage figures, poor performance and evaluation ratings, higher unit costs, and a weakened case for further funds from the grant sponsor). Later we will look at how the emerging trends are shaping the new macroeconomics. But first is it possible to identify a solid line of practice to give a firm foundation for the new outlook?

CRITERIA FOR RESOURCE AND SERVICE MANAGEMENT: PRINCIPLES

Maurice Line (Line, 1986) set down some very useful principles which academic libraries should take into account in increasingly difficult operational times. By definition these are times of resource scarcity and encapsulate the need to behave and manage economically. These principles were quoted extensively in Roberts (1998) and are restated now (at the risk of repetition, but also out of respect for Line's views) because the message seems as valid now as it was then. And perhaps because it does not seem that it is always heeded! Some questions which still seem relevant now and may still be largely unanswered are added. What goes for grant-funded academic libraries can go for others too in the public, scientific, and voluntary sector. These precepts for resource management are as follows:

On suggested principles for running a library, Line states:

the following are suggested as sound and defensible principles on which an academic library might be run.

(1) The library/information services required by the institution should be provided in the way that is most cost-effective for the institution. Nothing should inhibit the optimal use of resources made available to the library (as charging for selected services would, and as departmental control of the budget probably would). This implies that the institution (with the librarian's guidance) should work out precisely what facilities and services are required to support the work of the institution, and what resources are required to provide these facilities and services. A similar principle should apply to every academic service.

Line's stress on costing and financial context are as relevant now as then. Charging in the public sector remains in check and is confined to added-value services for individuals. A basic platform of service is defined and libraries strive to maintain it. The library bears the users' costs. Libraries which are well-used are valued by users who may seek further increments of value—this may pressure up library costs and grant requirements. But financial resources devoted by hosts to service are tightly controlled. Cost-effectiveness is usually for the institution rather than for the user! But, good financial management does contribute to optimization.

(2) Within the library deployment of resources—of money, staff and accommodation—should be optimized. (This requires that the librarian should (a) explore alternative ways of giving each required service, (b) calculate the cost of alternative ways, including the existing one, (c) calculate the effectiveness of alternative ways. If the results of these exercises are to achieve full usefulness, the librarian must have the freedom to deploy his resources for optimal cost-effectiveness. This requires a quite different budget structure from what is the norm.)

Rarely are library managers the paragons of virtue that Line implies. However, they do consider alternative means of service, but usually when pressed by events. Costing is still a weakly developed area of technical ex-

expertise, which limits the knowledge base for action. Line implies the value of program budgeting which is far from the norm in the UK, but possibly more widespread in the U.S.

(3) The valid use of library resources—stock, staff, equipment and accommodation—should be maximized. (This minimizes unit cost per use and helps to provide a justification for the operation—or not, as the case may be, depending on how low minimal is. The same principle should of course be applied to other academic facilities.)

No one would argue with this assertion. But with converged library/computer services systems emerging some redefinition of which resources belong to whom may be needed. Old models of ownership and possession are less meaningful now. Networking and sharing require their specific legal basis. Understanding the value of resource inventories and asset registers is part of the financial management picture too.

(4) Abuse of resources should be minimized. (Where this conflicts with the principles above, it should normally be subsidiary to them. For example, heavy penalties or deterrent charges may minimize abuse at the expense of reducing valid use.)

This proposition should remind of the value of appreciating scarcity and giving the reduction of waste of all kinds high priority: waste of money, waste of time spent because of poor operational technique, and waste of resources through poor utilization. Efficient management and financial management go hand in hand.

(5) Individual members of the institution should not pay for facilities or services that they need to fulfill their function in the institution. This has been argued above under 'Earning money' (see the actual paper for the argument).

Line restates the primary reason for public grant funding, but there is a wider implication. Members and employees need at the very least adequate information support to fulfill their task needs. There is a gap between professional idealism and practice, and the levels of financial sourcing needed have to be considered.

(6) Whether the library should carry the cost of a facility or service or require departments to pay them should be determined according to cost-effectiveness. (As where the term is used elsewhere in this paper, 'cost-effectiveness' is to be interpreted broadly and in the longer term.) This criterion seems the only sound one on which to select activities for charging of all elements in library expenditure to departments, but this is very unlikely to achieve optimal cost-effectiveness (principle 1 above).

This principle shows that the library has to consider its business model. Categories (D) through (G) are relevant here and the strategy of creating internal markets has been tried for several decades. There is still no certain

answer as to whether collective provision is more cost-efficient and effective in practice. In theory it could be, but it will tend to push up the level of grant required. In some cases internal markets are expensive to set up and run, but in doing so can provide the institution with a workable management information system to supply the necessary costing and accounting data.

(7) The library should not transfer its costs to users. [Although the library may not charge users directly, and although it may not even charge departments, the reduction or cancellation of some services (such as personal assistance with manual bibliographic searches) can make the user incur costs, if only in time, that he cannot recover from the institution.].

This principle firmly places a strong social and economic public duty on the service.

Libraries have to face financial and economic responsibilities and consequences. To do so they need the clearest vision and mandate upon which to operate. To support the achievement of Line's principles, financial management in all its aspects has to be present and ever strengthening.

Line then goes on to outline some solutions to economic pressures:

if the reasoning above is sound, the following are the measures that might reasonably be taken to mitigate economic pressures.

(1) Services can be provided to external users, particularly industry, for payment. (This can range from allowing external users and institutions access to the stock, to the provision of specially tailored services which recover more than they cost. Pump-priming may be needed. This could be a highly attractive course; some industries (as noted below) are contracting out their library and information services, and there is no fundamental reason why academic institutions should not make a bid. The extent to which staff attitudes may need to be changed—in the direction of entrepreneurship and giving value for money—should not be underestimated.)

(2) Economies can be sought in fulfilling existing functions. (This requires a radical scrutiny of every function, an exploration of different ways of achieving it, and a choice of the least costly. All costs should be taken into account.)

(3) The use of the total budget should be optimized (This requires: (a) an adequate costing system, which calculates regularly the cost of all activities and services, including unit cost. (b) a financial control system, to ensure that expenditure is properly controlled from month to month. These can be implemented with any budget structure, though they require, certainly initially a good deal of effort. More fundamentally, optimization requires: (c) a budget structured by function, cutting across staff, acquisitions, equipment and other recurrent expenditure (and possibly accommodation also). Virement between these expenditure heads would be necessary. The budget would be divided into: (i) Information services; including cataloguing, database searching, reference services, SDI etc. (ii) Document provision: including acquisitions, interlibrary document supply, electronic text access etc. Although virement may be hard if not impossible to achieve, a mere

paper exercise along these lines will be very revealing: for example, if acquisitions and interlibrary access are seen as part of the same budget, an optimal balance is much more likely to be attained.).

(4) What is required to provide the institution with the information it requires to fulfill its functions should be determined. (This is a longer term exercise, but it should put the library/information service on a far sounder footing than has been customary. A similar exercise should of course take place for every function and activity of the institution: the library should not be the only operation exposed to this kind of zero-based budgeting. The exercise would include the development—and use—of performance indicators.)

(5) A forward plan should be constructed, taking account of the likely pressures, technical developments, changing needs etc., to try and ensure that appropriate future provision is made.

Line's advocacy of program budgets is significant, as is the insistence on the centrality of cost information, and his view that performance measures have a place in a wholly integrated budgetary and resource planning cycle. More than fifteen years later Line's analysis seems as valid as when it was first presented. Now, features which were embryonic are commonplace (the Internet, the World Wide Web, the diffusion of personal computing, mobile communications, multimedia, and integration) with all their impacts of user behavior and communication. Is library and information service management really dealing with these challenges?

FINANCIAL ESSENTIALS: PRECEPTS AS THEORY

Roberts (1998) surveyed the resource management process and outlined the requirements of contemporary library and information managers. These are: planning and programming; delegation and devolution to internal business centers; explicit budgets and budgeting; rich information bases for action and decision; modeling and quantification; behavioral awareness; and, costs and other decision tools. The requirement for physical and financial resources was treated as implicit then, but is stated explicitly here. From the viewpoint of the three aspects of financial management (sourcing, deployment, and utilization) these requirements can be configured to fit the model of financial management.

Physical resources are an implied given although differentiated by characteristics and circumstances. The existing and currently available resources are assets which can be represented by monetary values which have depended upon past and present financial sourcing. To maintain them and expand them will require future access to financial resources.

Planning and programming (reflecting the purpose of the service and its goals), explicit budgets and budgeting, and the use of costs and other decision tools are the three requirements which constitute financial deployment.

Delegation and devolution to those responsible for operations is the requirement which enables financial utilization to take place. The effective

use of financial resources has to take place in its managerial context, in order to achieve both efficiency and effectiveness. Of course, this does not always happen in practice. Lack of supporting and enabling systems mean that managements tend to retain central controls over operational details by default.

Quality information systems enable managers to have strategic oversight of operations whilst at the same time enabling confident delegation to those closest to operations through the creation of business centers as autonomous and sustaining centers of activity. Devolved budgets can effectively enable operations but there must also be a mechanism to link together devolved elements for oversight.

There are three underlying managerial requirements: rich information bases for decision and action, processes of modeling and quantification, and behavioral awareness in the social as well as the technical domain. These requirements underpin financial sourcing, deployment, and utilization.

Can these requirements be translated into financial management principles to correspond with the practical operational principles Line has offered (for academic libraries in the first instance, but possibly for the range of library and information management activities)? The following interpretation is now suggested.

A. Actual and potential resources have to be financed from a source. This embodies Line's (1) "The library/information services required by the institution should be provided in the way that is most cost-effective for the institution." A largely publicly funded educational institution (a grant receiver) is thus likely to fund its library and information service in the same fashion. If the library information unit is not commercially freestanding, the host institution is the determining financial source. The principle implies that the information service resource (of whatever kind) has to have a visible and viable financial source. There has to be a clear way to answer the question: who is paying for/supporting the costs of this information?

Library and information development and service should stem from clear policies reflecting user circumstances and needs. Proper consideration of needs will identify the scale of requirement and the best source (of funding) to match the needs. If there is no policy, little can be expected and ultimately less will be achieved. If the service is to be open and public then public grant sources are a rational solution. If the product of the service is for private gain (rather than for a collectivity of individual gains) then public grant sources are not indicated.

Line's (5) "Individual members of the institution should not pay for facilities or services that they need to fulfill their function in the institution" is best linked within this precept since it is a consequence of his precept (1) (above). Meeting user requirements is an institutional responsibility: this is very clear in a public/grant-funded setting. Therefore, the financial consequences have to be recognized and borne. The public library rate

precept and the spend-per-student capita are direct reflections of these principles and are used to define financial revenue targets.

B. A financial planning process (within overall planning) has to be effected with programming concordant with the purpose of service and the relevant goals, aims, and objectives. Line's (2) is covered in this principle "Within the library deployment of resources—of money, staff and accommodation—should be optimized." The principle of optimization is rooted in recognition of the mission, goals, and aims of the service. These features reflect fundamental needs as expressed in policy (strategically and operationally).

C. The planning process provides the basis for explicit budgets and budgeting. Line's (3) states "The valid use of library resources—stock, staff, equipment and accommodation—should be maximized." Policy provides the rationale for the planning process and the allocation of resources. Budgets and budget processes provide the structures for maximizing the use of resources. Modeling and quantification are the tools to enable this process, but require rich bases of information for decision and action.

D. Systems are necessary for the collection of costs and the development of other decision tools. Financial management is a type of information management. Cost collection and other parametric information systems have to be in place to carry out the information management function. It is only within an information rich environment that Line's (4) "Abuse of resources should be minimized" can be achieved.

Optimizing and maximizing processes are ways to minimize "abuse"—that is to say, inappropriate and wasteful allocation of financial resources. But in reality, library and information services may have little precise idea on the rates of financial wastage in their systems. Accounting systems merely record the flows in a context and value-free manner. Accounting data have to be used managerially, in a sense incorporating quality and behavioral judgments.

E. Financial utilization takes place in various stages and conditions through delegation and devolution to those responsible for operations. The most autonomous realization comes through the creation of business centers as autonomous and sustaining centers of activity. Line's (6) is reflected in this precept: "Whether the library should carry the cost of a facility or service or require departments to pay them should be determined according to cost-effectiveness." This can be translated into "whether the library and information function is a social/institutional overhead or a commercial business center." The decision to accept the financial consequences at a given point on the welfare-to-commercial scale stems from policy, once again underlining its importance in financial management.

Line's (7) "The library should not transfer its costs to users" is a consequence of his (6) but it is open to variable practical interpretation. Policy could come to the rescue here. Service to a small group may not be cost-effective, but policy could be used to justify a subsidy. In practice there is con-

siderable margin to be exploited. A subsidy may be justified now on grounds of opportunity costs (it represents the best use of money) and it can be discounted against future benefits and value added. But making the linkage between present costs and financial conditions of service provision against the future benefits and values of information provision is one of the most taxing issues in the realm of information management and economics. At the moment financial management practice does not usually make the synthesis, although the academic literature discusses the theory substantially.

There are three underlying requirements, which are not directly related to Line's principles, but are clearly important for effective financial management:

F. Rich information bases for decision and action, and G. Processes of modeling and quantification have appeared in their context especially in C. and D. The application of cost measurement and cost-finding techniques provide the basic information for constructing budgets, resource deployment, and monitoring the transformation of resources into service and product. Equally, a good knowledge of resource prices, inventories, and value of resources in process is essential. Furthermore, cost control, budgetary control, measures of output, and performance measures in general contribute information for decision and action. The ability to model options quantitatively (using price, cost, and performance information) is also vital in the consideration of resource allocation and detailed budget construction. Lack of information and an ability to manipulate it creatively will reduce the reach of financial management.

H. Behavioral awareness in the social as well as the technical domain. Sensitivity to the impact of human factors, social processes, and the consequences of undertaking an activity (using professional techniques and technologies) implies a need for behavioral awareness. For example, time and cost measurement of work processes is straightforward as technique, but requires skill and sympathy to carry out with a working group. Measuring the work process may be interpreted as a threat or criticism. The work process needs to be measured as part of effective financial management but has to avoid negative social disturbance.

In general this precept implies the recognition and incorporation of a whole range of human, political, and psychological factors into the financial process. These are nonfinancial factors with a bearing upon the financial process. They are difficult to quantify and therefore difficult to formally evidence in the management process. But they are nevertheless evident and present. These behavioral requirements underpin much of the policy and organizational context for example in precepts A and B.

Aligning Line's principles to the requirements for financial management identified by Roberts suggests a good fit between the two. At the gen-

eral level it would be worrying if they did not, but it is what is evident in specific bodies of practice that is the real concern. From the analysis made, the application of a high level of cost management and budgeting processes would seem to be an essential requirement.

If this paper serves as a commentary on the author's attempt to produce a synthesis on the topic, a search of the post-1998 literature reveals relatively little advance in academic interest or practice. It is difficult to rewrite the conclusion posted in 1998 about essentially limited innovation and improvement in practice in the central concerns of cost measurement and budgeting. But, the debates on essentially macroeconomic topics have continued to grow. We move on to review these issues before attempting a conclusion for 2002.

EMERGING TRENDS: MACROECONOMIC ENVIRONMENT

So far the discussion, although complex enough, has been of a linear character looking at financial affairs through a microeconomic perspective. Now we must acknowledge reality and introduce dimensions of complexity through a macroeconomic perspective. This allows the incorporation of the external environmental features which constitute much of the real working environment of library and information provision.

The concept of the user has come to occupy a central position in library and information service theory and practice. The user studies movement has provided some intellectual backbone with a focus on information needs and requirements.

This has provided some theory to underpin practice developing the notion that all information service should be user-centered. A greater understanding of the user has helped to sharpen and prioritize service policies. It is from this that the connection to financial management can be made and reflected in precepts A and B.

User needs provide the focus for resource allocation and studies of use and demand have supported this. The user aspect has to be understood since financial sourcing is justified through the user (more accurately, the consumer/customer in a commercial setting). This leads to a fundamental financial question: how much to spend on behalf of each user and who should bear the burden in each setting—the user/consumer/customer (private and commercial) or the institution (public and welfare)? Spending per-capita figures can be elicited historically but are difficult to predict in terms of need. In a fully commercial environment, market opportunities and demand determine resource and production levels. Perceptions of user need (from a welfare stance) are the equivalent of market opportunities and demand in the grant-funded public sector.

The library and information sector has grown steadily in terms of its professionalism; few would doubt this assertion. But a question is often posed about the actual or potential conflicts generated between the pro-

fessional and the managerial role and perspective. Professionalism is foremost a social construct imbued with aspirations and ethics. These aspects are not easy to negotiate financially. It is usually wiser to entrust the financial responsibility to those who can best balance the professional with the managerial. This has opened up divisions in library and information organizations as professionals feel that materials funds are inadequate, technology budgets limited, staffing levels insufficient to deliver service, and so on. Is the sometimes-felt lack of financial clout of the library and information service field due to this professional/managerial conflict?

The library and information profession, however defined, has become accustomed to taking on new responsibilities. Many identity and boundary crises have been addressed and often resolved beneficially. Technology has pushed and pulled each professional generation. But new responsibilities carry financial obligations and consequences. Competitively and strategically the information sectors most closely allied to the ICTs, the private sector, and the commercial world generally have been more successful financially (although corporate libraries have been closed and their functions dispersed). When the public sector of library and information activity has wished to respond to new opportunities it has found it difficult to do so from the grant-supported base. The funding of new technologies has been an Achilles' heel, to which funding agencies and grant providers have had to respond ultimately with new money. In UK academic libraries the Follett report and the Joint Information Systems Committee have addressed responses to the ICTs with new money, and similar developments have been required for public libraries and the New Library Network. In the U.S. there have been similar initiatives.

The ability to innovate in times of rapid change has become a test for the library and information profession and especially for its public sector/grant-funded agencies. For financial management the consequence is clear: more capital spending and new operational money are required. If this is not forthcoming there has to be some deregulation and engagement in commercial activity for which they are not naturally well-suited. Corporate sponsorship and joint ventures may be a way forward to overcome difficulties and disinclination.

Converged services were an early response to technological change. A converged service results from the integration of computing-based and computer services activities with traditional library and information services. It has been a common occurrence not only in academic libraries but also in business organizations where it is sought to bring all information functions together strategically. Apart from the hunger for more funding necessitated by restructuring, converged services present challenges for governance and for planning, budgeting, and accounting. Convergence increases the mass of the information-related overhead expenditure, the complexity of operational tasks, and their management.

The hybrid library does not necessarily have to form part of a converged service, but in practice it usually is, and the convergence itself creates the conditions for the maximum exploitation of digital resources. The hybrid library concept has initially become associated with academic library provision as part of the creation of the digital campus. It is essentially a delivery mechanism to acknowledge and ensure the continued service of the traditional paper/document-based library combined with the provision and exploitation of digital resources. In the longer run the hybrid library concept will spread to all library and information sectors. Hybridization and convergence are powerful influences in the personal sphere where PCs, hardwired telecommunications, and wireless and mobile technologies are changing the relations between individual users and the whole range of information and media provision and use in the widest sense.

In some ways the hybrid library defines a fault line with the historic library. The dematerialization of information (no longer delivered through a physical document format) has radical consequences for the financial management of library and information service (Roberts, 2000 and various papers in Gorman, 2000). In buying a document, the library constructs a certain ownership which it combines with the duty of user access. In the hybrid collection, digital resources are bought (under a range of vendor-buyer arrangements) or payments made for access to them. The simplicity of purchasing a document and retaining it is replaced by purchasing access and/or the need to maintain the digital resource. The financial requirements of managing and maintaining technology-based access are demanding.

Digital collection management has emerged to complement document collection management. The financial impact of digital collections in academic and research libraries is a topic of much recent interest and professional writing (Roberts, 2001a). Financial pressures had been felt very keenly in the management of traditional collections. The new media provided novelty and opportunity, and perhaps offered a release from historic pressures of collection funding. In reality digital resources are not likely to be cheaper to acquire or lower cost to operate, since relatively high capital costs are involved and regular maintenance charges are a feature. Nevertheless, digital collections offer vastly increased (and possibly more efficient) access to information. Coupled with the flexibility and manipulability of digital media such resources may offer good value for money.

In traditional collections there are one-to-one relationships between units of spending, acquisition, and use. In digital collections one spend usually gives multiple acquisitions (in the form of access) and use. In the future this may lead to user-access funding instead of collection funding as a major financial priority (Roberts, 2001b). This may have serious implications because, despite all its problems, collection spending does lead to the acquisition of physical and durable assets. If the library is grant-funded its income will be spent on subsidizing access through user charges with-

out increasing assets in the form of collection materials. Digital publishing initially would seem to strengthen the hand of publishers and weaken the power of library consumers. Publishers continue to have a strong interest to protect their intellectual property and maximize its economic exploitation through access charges (Roberts, 2001a); and furthermore, the environment is a real time one. Digital media can be updated easily and publishers naturally wish to protect their rights of exploitation. Libraries have responded by negotiating licensing agreements and developing library networks and collaborative arrangements to strengthen their buying power. Licensing provides a compromise between pay-per-use and unlimited use for a segmented user base.

In the sense that financing collections has been at the core of library finance, the arrival of digital media is likely to be one of the strongest influences on future financial management. On the other hand, publishers and library and information services do have many mutual interests which can be managed to achieve mutual success (see Roberts, 2001a, for a further discussion).

Access policies are a traditional professional concern and a consequence of the growing importance of digital resources. These policies form a response to the macroeconomic environment. In grant-funded institutions user members' access to information was implied and subsidized. But as the range of sources has grown, many are located outside and distant from the institution. This raised the financial question of who was to pay for such external access, for if no one paid, users were denied access. The access to external services theme arose in the 1970s with online database access, but was well-established before within the scope of interlibrary lending and borrowing. External access has created a financial burden, and a consequence of it has been the development of commercialization across the information sector.

Information markets and marketing naturally emerged as a theme from the growing external sourcing and commercialization of information. Information services in a commercial environment had little difficulty with this as they simply incorporated the costs of information access into product prices. But grant-funded welfare operators were faced with a tough problem. At first the response was to ask for more from their sponsors, but this rarely led to extra finance to meet growing user demand (e.g., online bibliographic access). Changes came about by the adoption of the business model in the direction of commercialization.

The gradation of business models considered earlier in the paper is in some ways the response to this problem. Commercialization and income generation was the only way to move ahead. But all the while, this promoted a conflict among professionalism, markets, and user needs. Over the last thirty years the information service markets have become more diverse and specialized. Grant funding has remained more or less constant and inno-

vation has increasingly been funded by commercial activity. This is a financial managerial truth that cannot be baulked, but one that hurts the public sector and its users.

Public-private sector relations emerged as a theme as a result of these developments in market diversification. The new economics of the 1980s evolved a preoccupation with this theme. Certainly in the UK it became a major issue, on the one hand sometimes carrying negative connotations and on the other hand, more positive ones. In the 1990s UK, the theme became an orthodoxy and an avenue for encouraging managerial creativity. Financially, it has opened up new sources of funding through commercial sponsorship: creative dealings are no longer entirely frowned upon. But new money also has to be shown to be clean money. Good accounting systems are increasingly needed to assure information to guarantee political transparency. "Partnerships" could provide a politically correct vehicle to re-source what the public purse cannot or will not do, and the idea of ethical businesses helps to keep a favorable public image. The financial and the political go hand in hand!

If we are to look ahead, virtual information environments may become the dominant information systems. This will be a combined technological, professional, and economic macroenvironment. To look to the future is one task of this paper to try to see what implications lie ahead for financial management. Hitherto, the financial and business models have been largely organizationally based. The need to meet the requirements reviewed above will not diminish, because library and information providers will still operate within this model. But the virtual environment will provide a framework for multiple transactions between users and providers and the mechanisms of e-business and m-business will facilitate trading.

Knowledge management is a current paradigm in the information and library sector and is a shaping force in future economic and business activity. It has been extensively discussed and reviewed in terms of its importance to private and public environments (e.g., Stewart, 1997; California Management Review, 1998). It is likely to evolve into forms which allow greater convergence and integration of information sources, delivery systems, user needs, and contextual environments (occupations, tasks, etc.). Virtual and digital environments are ideally suited to knowledge management but are far from being an exclusive domain. Information, knowledge, social action, learning, change, and adaptation form a strategic macroenvironment of great complexity and power forming a matrix for the digital virtual environment. What will be needed are economic and financial tools which can assist the management, measurement, and control of these processes.

In the short to the medium term, the conventional financial, budgeting, and accounting tools are necessary and adequate. They are standardized and durable and should be adopted by organizations: the benefits from application will outweigh the costs. In the longer term, digital and electronic

technologies will manage processes as well as provide a means of control through transaction processing. It is not too soon to look ahead to see how new financial and accounting technologies could be exploited for better financial deployment and utilization. A line of evolution from swipe cards to stored value cards and on to PDAs and wider corporate transaction systems and automation will open further potential for resource management.

FUTURE PROSPECTS: PRACTICE

A number of lines of development can be identified. But first some assumptions have to be stated.

- For the commercial information provider (types (H) and (J)) standard business financial practices have to be employed for sourcing, deployment, and utilization. In this environment all the objectives outlined below have to be achieved.
- For the grant-funded providers (types (A) to (D)) the limitations of fixed funding and limited sourcing flexibility have to be understood. Clear service policies are needed to determine spending priorities. For types (E), (F), and (G) the requirement to meet these financial management objectives is more intense and exigent.

The objectives for financial management are as follows:

- Financial sourcing in accordance with organizational, user, and access policies.
- A planning and review mechanism is required and used in conjunction with an explicit and workable budgeting system.
- Resource and asset inventories are required and a system of cost finding developed and maintained.
- Proper financial deployment structures and techniques are required. These have to be reviewed and deficiencies dealt with as necessary.
- Process and unit costs should inform budgeting.
- A program-activity budgeting system is required, and although grant-funded operations have tended to make do with line-item budgets, some reform is required.
- Budgeting has to develop an informed managerial style without compromising professional standards.
- Budgeting systems have to provide a foundation for cost and management accounting as well as more conventional stewardship accounting.
- Implementing these deployment processes will enable effective financial utilization. Cost finding and measurement systems are required for deployment but have to be maintained through the utilization phase.
- Financial utilization has to be developed to incorporate systems of budgetary, cost, and operations control. Throughput and output processes are to be monitored through the construction and use of performance measures.

These are basic assumptions that have to be fulfilled in every information service provider organization. With these in place, future challenges can be faced. A number of challenging themes can be identified which require financial management responses.

Organizational Financial Management. It is safe to assume that there is scope for improvement in every organization: in securing funding streams, cost measurement, budgeting processes, management information, and in cost efficiency especially where commercial activities are concerned. Each organization needs to review and define explicitly its financial management requirements in the areas of sourcing, deployment, and utilization. As providers came to see the value of written collection and user services policies, so should the same be done for financial management.

Financial management policies and techniques need to be visible and explicit as the core of microeconomic management. Only in this way will the growing need to master the external macroeconomic environment be achieved.

Electronic and Hybrid Resources. The expanding production and growing market distribution of digital resources is likely to have the greatest impact on macroeconomic financial management. The coverage and integration of digital resources will be a significant resource cost, but will also raise new service costs. Although libraries may increase their contribution to content production and engage in commercial activity, the cost burden will be generated by continued needs to make effective content management a focus of service. The information center will therefore remain a consumer of content and in a welfare setting will have to cover the costs of consumption for their clients. Grant-funding budgets will be challenged by this and centers will have to demonstrate value gained through cost and financial measures. These service costs will not have the added advantage of generating asset values through collection spending and materials accumulation.

Clear financial management strategy and good technique will be essential to assure grant funders that the best value is being achieved. Digital providers and publishers will exploit their intellectual property aggressively to maximize returns on investment. But, Roberts (2001a) has argued that the symbiotic relationship between publishers and information service providers may show the value of collaboration rather than competition and exploitation as the best mutual response.

COLLECTIVE VERSUS INDIVIDUAL RESPONSIBILITIES

The association of welfare provision, public service, and grant-funded financial sourcing is a solid manifestation of collective responsibility for individual needs. Historically, information and library service financial management practices can be seen to have evolved to support this association.

When funding provision is adequate, or even generous, the relationship works well. However, the financial stresses which have become widespread

in the sector since the 1980s have led to some adaptation and innovation. There has been little alternative to adopting a more commercial market orientated approach and to consider selectivity and differentiated service levels as concomitants. When grant-funded budgets are perceived as less than adequate to meet needs, commercial and market activities are seen as a way to either generate income or transfer consumption costs from the collective to the individual. This may, of course, be at variance with the prevailing professional ethic which historically is towards public service, which when adequately funded can be economically efficient. In these settings financial management enters a political realm as much as an economic one. Just where the line lies at the moment is an important question. If the line moves towards the individual and the market it is clear that financial management is both more central to the process and has to be more evident and stringent.

User Consumption Models. The professional service environment has always presented a mixture of welfare and commercial aspects and within each strand a working equilibrium is usually achieved. But problems arise at the boundary of the strand: for example, when a free at-point-of-use service introduces a user charge. The impact is usually greater on the welfare service user than on the private sector commercial user.

Under an equilibrium condition of public support for individual social needs, existing financial management technique in the welfare sector may be adequate even if capable of improvement. In the commercial sector, market mechanisms and financial discipline are largely homeostatic anyway. When adjustments seem to be necessary in the welfare sector it is the individual user in the collective who feels the impact and who senses the aggressive intent of financial adjustments. Pay-per-use and explicit individual consumption models are the most common sources of disturbance, because they undermine the consensus of collective provision.

Offering Service and Added Value. Where the macroeconomic conditions require greater financial managerial discipline, the professional response is to stress the relation between service and value. Claims are made that users tolerate charges because they can be associated with service efficiency and added value. Users have to define their needs more clearly; the service provided may be better targeted and they value what they have to pay for. This inevitably highlights issues of cost and price, and poses a question about ideal levels of resource support and where that support comes from.

Charging for services has been a highlighted feature of the information sector for more than thirty years. For-profit services have seen their markets grow and new services have been developed using the technologies; appropriate financial management has underpinned the exploitation of opportunities. In the welfare sector greater tension has been created as conflicts between public and private good have arisen. Services have thus found themselves operating across both sectors, but often with insufficient

financial management experience or apparatus. In spite of an extended period of learning, these tensions remain. More formalized financial management may be the only remedy: it can support commercial activities and at the same time enable more rigorous justification of welfare spending. Public sector efficiency is no longer politically incorrect!

Information and Knowledge Life Cycles. The information and library sector works with a unique asset: information itself. The profession has long been fascinated (as much as perplexed) by the nature of information. Historically, the information service product has been transacted and exploited through the physical embodiment of information—the document. Like any other physical asset this is subject to depreciation and obsolescence, which may necessitate capital replenishment. In the digital environment the life cycle of information can be prolonged, with reduced (physical) depreciation, albeit with maintenance costs. With the ability to extend the information life cycle, assets can be conserved, but a corollary is that review and weeding may become more important to ensure relevance; this may incur additional costs.

We can envisage some consequences for financial management as a consequence of the shift to digital media. Expenditure on access and maintenance will increase, and that on physical document assets may remain stable or decline. Editing and review in managing content may turn out to have strong financial consequences since expensive human assets are required for the task. The patterns of these changes are likely to become much clearer in the next few years. Certainly, operational patterns of activity will change and these will have internal financial consequences requiring rebalancing of deployment and utilization.

Within the emerging knowledge management paradigm these features will be intensified. In general, knowledge production and life cycles are more complex than for the information component alone. They pose the problem of financial management and accounting for implicit and intangible assets. We can predict that information and knowledge operations will account for more expenditure and require even greater financial vigilance. We have yet to make the links between information and knowledge accounting and its financial side, but this should provide a research agenda in the coming years.

Intellectual Property. The growing visibility of information and knowledge assets and their communication and transaction has led to the increasing realization of their value. These assets form intellectual property, whether or not embodied in any particular media. This perception should really be welcomed by information professionals who for many years have campaigned around the value, resourcefulness, and purpose of information. But its commodification has to be rationalized with other professional and ethical values and this creates angst for some in the process. Whilst intellectual property embodies a moral and legal component at its base, the

economic component is realized through the communication implicit in the cycles of information and communication activity.

Values and Ethics. Professional values derive from and represent the social conscience of those active in the world of information. The development of the professional and occupational group has been associated with a consideration of such values: professional obligation, public duty, access to information, information and citizenship, privacy, confidentiality, security, and so on. Financial management itself has its value framework of accountability, transparency, reporting, audit, and review. In reality these technical and professional issues, however different, have to be dealt with under the same common framework.

Weak financial procedures are not only a technical and operational threat, but may hinder the realization of the wider framework of values which ideally bind service professionals to their clients. Financial procedures do not create the system of values but they do positively help to maintain it. For the future, financial managers must strive not only to be technically competent within the organization but must ensure that these tasks are conducted in the spirit of the collective values required by the profession. Herein lies the ethical dimension which maintains the system of values. Equality of access and equity of provision are key issues with clear financial consequences: greater accountability will generally assist greater equality.

Resource management inevitably encompasses a political dimension. Scarcity of resources necessitates consideration of priorities, interests, and choices. Decisions have to be informed by direction, by policy, or by political desire or need. The political aspect may be more or less explicit. Grant- or tax-funded public libraries often incorporate political policy in resource and financial decision-making. In a commercial setting, information sourcing decisions should reflect business purpose, but this might imply a political element as one view prevails over another. Political processes incorporate values and may also maintain a strong ethical element. Clear financial managerial models play a part in mediating the political dimension as much as they do the economic one and thus have some effects on the values culture. In the organization, decision-makers have to balance resource allocations and may use the principle of equity as much as need. A decision one way rather than another may require a compensating explanation.

Fuzzy Environments. From the foregoing discussion it must be clear that the macroenvironment of financial management is not only diverse and complex, but also fuzzy and indistinct. That is to say that relativities play as important a part as absolutes. At first perception some see financial management as quantitative and numerical; this may be to confuse the accounting with the managerial purpose. In reality financial management is substantially qualitative, social, organizational, and political. Seeing what should be done is as important as the actual doing of it and this vision should always be clear at the first stage. But fuzziness and complexity are not an

excuse for lack of clarity or any other half-hearted views of action. Financial management is strategic management in which once the course of action is set, the need is for excellent technical systems for implementation, operation, and control.

PRACTICAL CONSEQUENCES FOR STAKEHOLDERS

Financial managers need to recognize a number of issues in practice. They need to recognize their stakeholders and try to maintain policies for decision which uphold stakeholder interests.

Users should be seen at the heart of the financial management of the information service. Financial management is a means to achieve proper ends. The user and customer need has to be incorporated in the strategies and policies from which operational and financial goals, aims, and objectives will be developed. A key question to ask is to what extent and how these user interests are met in practice. To provide quality service free at the point of access has its financial consequence most keenly felt by users when charges are introduced and costs are transferred. This may be exigent financial practice but not good financial management from a user perspective. Service costs should aim to minimize user costs for a given level of service specified through a policy.

Information professionals are not always the financial managers so they need to be separately distinguished as a stakeholder group. In giving service, this group is at the sharp end, having to mediate financial decisions through the customer interface. The financial manager, in considering the overall requirements of the organization, needs to think in terms of the power (or lack of it) that expenditure delivers to the working information professional: this has a capital as well as a current context. A financial manager has to see the capitalization of service professionals as a serious measure of success in the same way as an automobile production manager sees machine investment per line worker as a measure of standing. There is much scope for financial managers to sensitize around these stakeholder issues. In practical terms, program and output budgeting helps to realize these perspectives by enabling the calculation of useful measures and ratios to inform decision-making, and to relate resource inputs to outcomes.

The financial manager may enjoy considerable power and influence, but in the organization, he is also another stakeholder interest. Managers have to work within the power role, but they also need friends so as to exert influence! Multiple-way communication thus takes on significance in financial management because command and control rely upon compliance. Those injured by poor financial decision-making tend to comply less willingly, although they may be compelled by duty and contract.

Financial managers have to develop effective relations with stakeholders to achieve their performance goals. In effect they play the role of the banker and have the power of the bank, but this must be tempered by good

customer relations which encourage good business behavior and conserve and increase customer capital. Anyone with financial managerial responsibility would do well to consider these points in practice.

CONCLUSIONS

The delivery of information services (of whatever kind) can take place over a broad spectrum of organizational and business settings. Resource requirements and their financial management (financial sourcing) show variation over the same spectrum. How much is to be spent is, to an extent, governed by who provides the resources reflecting user needs and demands. What is the trend? In the public sector the collective has the initiative and the power to determine the relationship, and resourcing is a matter of policy foremost. In the market sector the consumers enjoy considerable power through their desire to purchase or not; all managerial decisions however distant have to follow these trends. These two boundaries determine the trend. Balancing public and private interests in the information market was and still is the question to be resolved. There are still any number of answers! But professional as much as managerial judgment will provide them.

Questions formulated and papers reviewed some fifteen years ago (Roberts, 1985) were more recently reviewed by the same author (Roberts, 1998). Has any variation in the trend occurred since then? It appears that the environment is still changing more rapidly than the techniques and the lags in practice noted above still seem to be maintained. Financial management (and deployment in particular) is still cottage industry rather than industrial and managerial.

The technical response to financial management can be advocated and achieved, but is nothing without the context of need and policy. Furthermore, a range of organizational competences can be developed to provide a basis for services. But, beyond that, the effective management of the information resource component is still challenging. Experienced information professionals know that information and library activities are substantially complex: as complex as any medium-range business enterprise. Managers thus have to increase their command over their microenvironment in order to have any chance of dealing with the wider macroenvironment.

This then is the proposition: each professional and manager must ensure that the financial management basis is as well-ordered as it can be. Assume the future to be more complex and turbulent than the past. Hopefully, this review can stimulate thought, debate, and even action. By offering some checklists, discussion points for debate are presented. Line's principles seem as sound as ever and echo a wider and continued interest in the subject of managing library and information services. These principles can and have to be adapted to the new hybrid and digital environments of information and knowledge work. The paper has tried to highlight the financial subtext within Line's general principles. The practical objectives

of financial management need to be checklisted and addressed through policy and action points by every provider so that clear lessons for practice can be drawn.

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