Paul Schneiders

Paul Schneiders studied history and obtained his Ph.D. in 1982 on the dissertation, The Library and Documentation Movement, 1880-1914; Bibliographical Enterprises about 1900. He lectured at the Amsterdam School for Librarians, Documentalists and Editors from 1971 until 1993 and has written many articles and several books about the history of libraries and bibliographic activities such as Van kleitablet tot databank (From Clay Tablet to Databank) and Lezen voor iedereen (Reading for Everybody), a history on the public library in the Netherlands. This book, a history of the libraries in the Netherlands, is based upon extensive reading and original sources. It is the first general history of libraries of all kinds (except for private libraries) in this country, and is lavishly illustrated in black and white and in color. During the IFLA Conference in 1998 in Amsterdam, Mr Schneiders will give a lecture about the characteristics of Dutch library development for the Round Table on Library History. Mr Schneiders may be contacted at Slochterlaan 13, 1405 AL Bussum, Netherlands.

[The text which follows is a summary of *Nederlandse Bibliotheekgeschiedenis; van librije tot virtuele bibliotheek* (Library History of the Netherlands; from Medieval to Virtual Library), and has been translated by Heleen M. Schneiders. "The Netherlands" here is used to refer to the present Kingdom of the Netherlands in Europe. Colonies and former parts of the Netherlands (e.g., Flanders) are not included and neither are privately owned collections.]

Libraries in the Netherlands

The Middle Ages

Despite the fact that during Roman penetration and colonization of parts of the Netherlands (ca. 50 BC-350 AD) there may have been a modest collection of Roman texts in the Netherlands, Dutch library history did in fact not commence until the late 10th century.

Compared to countries such as Italy and France this is a relatively late start and is the result of the delayed christianization of the Netherlands, due to its peripheral position within the *Imperium Romanum*. Christianity in these regions was preached by missionaries such as Willibrord, the first Bishop of Utrecht, and Boniface (Wynfrith), the apostle of the Frisians, in the 8th century. Both men had come from England to the European continent. Boniface was a great lover of books and the story goes that the Frisians, after having killed him in Dokkum in 754, callously scattered his books – which he used to carry with him in a chest – all over the fields. During this period Dorestad (now known as Wijk bij Duurstede) and nearby Utrecht served as ecclesiastical and economic centres. Undoubtedly small collections of books existed in these towns. A codex preserved in Vienna indicates that around 780 it belonged to Theutbert, Bishop of Dorestad. The Normans invaded and destroyed Dorestad; Utrecht, over a period of two centuries, lost its central position.

The author, Paul Schneiders (left) Presenting First Copy of Book to Aad Nuis, Deputy Minister for Culture (right) on Television Show Hosted by Boudewijn Büch (centre)
[photo by Fotobureau Thuring B.v.]

The Dutch Count Dirk II founded the monastery of St. Adelbert near Egmond (approximately 30 kilometers northwest of Amsterdam) around 970. This was one of the very first monasteries in the Netherlands, inhabited by a group of Flemish monks who were invited there by Count Dirk II. These monks had brought books along with them to the north from their monastery, the St. Peter monastery in Ghent. This event can be seen as the starting point of the history of libraries in the Netherlands. The collection of some dozens of books that now existed in the Benedictine monastery was further extended with various donations. Count Dirk II and his wife, Hildegard of Flanders, for example, in the event of their marriage donated a valuable book of gospels. The book was probably made to their order in either Flanders or northern France. The *Evangeliarium Egmundaneum* can now be found at the Koninklijke Bibliotheek in The Hague and forms part of an impressive collection of manuscripts.

The Archbishop Egbert of Trier, Count Dirk II's brother, donated no less than 19 volumes during those first few years. Among these there were hagiographic and patristic literature, a missal and an anthology of the Holy Scripture, a psalter, and textbooks for the monastic school. Gradually the scriptorium itself, too, became responsible for the growth of the collection, which, as in other monastic libraries, consisted almost entirely of religious works. At the end of the 14th century the

Egmundian monastic library contained around 250 volumes and was consequently one of the largest libraries in the Netherlands.

As a result of the expansion of the number of monasteries there probably were several dozen monasteries in the Netherlands during the 13th century, of which some possessed important collections of books, as did the Abby Bloemhof (Bloemhof Abdij) near Groningen in the northern part of the Netherlands. There is sufficient information about the founding of Bloemhof around 1200 thanks to the chronicle of the first Abbot Emo (b.1170-d.1237). This chronicle was later continued by his brother Menko and reflects the former's great love of books. Emo and Menko had both studied at Oxford, Paris and Orléans, where they had copied a large amount of books, including works by Ovid and Virgil. Abbot Emo encouraged the monks to continue copying and the scriptorium of Bloemhof thus, among other things, produced a collection of the biblical stories by Petrus Comestor (*Historia Scholastica*) as well as texts by Augustinius and Gregorius. This treasure of books was meticulously looked after and cherished by Emo, as can be concluded from the care he took in admonishing the brothers not to lend any books without his permission and urging them to carefully and accurately register all that went out of the library. On a journey to the general superior in Prémontré (Northern France) Emo brought several hymnbooks along that he himself had copied in order to compare these with copies held in Prémontré.

A third important library was situated in Rolduc, in the province of Limburg in the south of the Netherlands. This library has been lost entirely.

From around 1200 onward, scripture in Europe experienced considerable expansion which was especially the result of the arrival of universities, the introduction of paper (a cheap alternative to parchment), the growth of towns and the rising number of monasteries and churches. The start of an organized administration, too, stimulated writing activities.

The first university in the Netherlands (Leiden) was not established until 1575; thousands of young Dutchmen at that time however, studied abroad at universities in, for example, Orléans, Paris and Leuven (Louvain) in the late Middle Ages.

Intensive writing was done in new monasteries such as those of the Carthusians, an order of reclusives founded around 1100 in southern France. Dutch Carthusians settled, among other places, in Den Bosch (1336), Arnhem (1342), Utrecht (1392), Amsterdam (1393) and Delft (1470). Together with the fruits of their own writing as well as through gifts (from monks as they entered the convent, and from students from outside and benefactors) books were either purchased or ordered to be made by professional lay scribes. Unfortunately, as a result of lootings and theft at the beginning of the revolution against Spain (1568-1588), only a small portion of these collections remain in the libraries in the Netherlands. A fortunate exception in this case is the library of the monastery of Nieuwlicht (*Nova Lux*; New Light) near Utrecht which, around the year 1500, probably held approximately 300 volumes. Around 150 manuscripts and 80 early editions from this library have survived the turbulence of the sixteenth century. Most of these are now held at the library of the University of Utrecht.

In the 15th century around several hundred monastic libraries existed in the Netherlands. Most of these were undoubtedly small, containing no more than a few dozen volumes as did, amongst others, the libraries of Benedictines, Franciscans, Cistercians and Premonstratensians. Under certain conditions laymen were allowed access to these libraries. A major category is represented by the collections of the Devoted, the disciples of Geert Grote (1340-1384). Geert Grote, who was born in Deventer, had an enormous influence on European religious life with his reform movement, the Modern Devotion (*Devotio moderna*). A strict renouncer of worldly affairs, he called for a return to the original and sober Christian lifestyle and the *vita apostolica*.

Modern Devotional literature was a main asset in the christianization propagated by Geert Grote, who, incidentally, was a great lover of books - he himself spoke of his "boundless hunger for books". His disciples founded homes for brothers and sisters where they taught and copied manuscripts. Begging was strictly prohibited and the Devoted mainly lived off the earnings of the sale of the books that were largely written on commission. The Devoted thus introduced a new, commercial, element in religious scripture and the scriptorium; they were also known as "the brothers of the pen". Copying was organized meticulously and the librarian was responsible for the scriptorium and management of the books. The librarian had to be commercially-minded and had the task of bringing in customers, ensuring that the clients were served quickly and assisting them with choosing the type of letter, for which there existed a book of samples. Compared to the inventories of other libraries, those of the Devoted were remarkably accurate and well organized. So-called *tabulae* were used: sheets of parchment, stuck on wooden boards, that were put up on the walls, presenting the public with a clearly visible overview of what was available. The Devoted were also noted for their work on a central catalogue that included the possessions of numerous other libraries.

The largest library of the Devoted in the Netherlands was probably the one belonging to the Heer Florenshuis (the House of Lord Florens), in Deventer, containing approximately 1250 volumes, manuscripts and printed books, in around the year 1500. This collection is likely to have been the largest in the Netherlands. Attempts by the Devoted to set up printing houses failed.

During the Renaissance the custom arose for private owners to legate their books to certain corporations, thereby introducing something resembling the public library as we now know it. A prominent lawyer from Leiden, Philips van Leiden, in his will of 7 March 1372 requested that his collection of circa 40 books be accommodated with a corporation. By doing so he may have been following the example of Petrarch who, around 1362, left his books to the city of Venice. Philips' main argument for this decision was the fact that many of the suitable and talented prospective students decided against studying as they could not afford to purchase the required books. As the state was in need of scholars Philips wished for his books to be available to students. At the same time, the collection was to be a monument to Philips himself. Philips' will carefully regulated the usage of the books, even including a series of fines. Philips was responsible for his library being accommodated in the *Templum Salomonis* and members of his family were the first to be allowed usage of the books. Sadly, almost the entire collection has been lost, probably during the turbulent times around 1575. A single last remaining volume is now kept at the University Library of Leiden.

At the end of the Middle Ages, libraries consisting of pious works could not only be found in monasteries, convents and chapters, but also in churches. Naturally the churches owned works that were indispensible for worship; at the same time there sometimes was a separate book room, a *libraria parochialis*, for religious and scientific works which had been donated to the church. It is evident from the accounts of churchmasters that carpenters and smiths were often assigned to build cabinets and chains. The latter were used to chain books together (*libri calanati*), an example that was later followed by many municipal and university libraries. Church and cathedral libraries around 1450 existed in, among other places, Gouda, Groningen, Leiden and Utrecht. A very special and genuine library monument is the library of Zutphen which was built around 1562 on the initiative of churchmaster Coenraad Slindewater. This library was constructed following the example of two monastic libraries near Zutphen, which Slindewater had visited to inform himself of the interiors and dimensions. The library of Zutphen in the church of St. Walburg thus may have been built in the 16th century, but was, however, modelled on medieval monastic libraries. In a room with a length of 20 yards and a breadth of 8 yards a single row of lecterns was placed, providing room for 10 readers.

On 10 August 1562, the holiday of the patron of librarians, St. Lawrence, the roof was finished. In the municipal archives of Zutphen documents belonging to Slindewater are being kept, showing the sort of library he had in mind. Slindewater's library was to contain not only religious, medical and legal books but also works on other sciences. "Good books are worth more than gold and silver; a library is a better place to stay than an inn" were Slindewater's mottoes. Also, the notion of local patriotism was not foreign to Slendewater; he argued that if cities such as Paris, Bologna and Rome possessed fine libraries, Zutphen could not lag behind. Sixty keys giving access to the premises were handed out among the elite of Zutphen, as a result of which the library can be said to have fulfilled a more or less public function. The library building of Zutphen is the oldest in the Netherlands.

From the Invention of Printing to the Age of Reason, ca. 1450-1750

The 16th century was an intense and chaotic period in which numerous libraries were divided up, destroyed or passed on to other hands. The arrival and distribution of the printed book in many cases led to the destruction of handwritten copies. The first printed book in the Netherlands appeared in Utrecht in 1473. It was mainly the Reformation and religious wars, however, that led to either drastic changes within, or the loss of, librarie-s. Of great importance is ascendance of the idea that libraries should be accessible to all interested members of the *Republica Litterarum*. In the Netherlands this led to the birth of municipal and university libraries which were open to the elite.

William of Orange led the Netherlands in a revolt against Spain in the so-called Eighty Years' War (1568-1648). The result of this conflict was the Independent Republic (1579) in which Calvinism was the dominant religion and Catholics became second-class citizens. The Catholic faith was not actually forbidden; the public celebration of Catholic services, however, was. The war against Spain had far-reaching consequences such as the founding of municipal and university libraries whose core collections were often expropriated from monastic and church libraries. Much was also lost through war-related events. Lutheranism gained support in the Netherlands from 1525 onward, followed by Calvinism. -The Catholic administration combatted against the new doctrine in the form of censorship and rigorous penalties as a result of which a large number of "heretics" were sentenced to death. As part of the counter-revolution the episcopal hierarchy in the Netherlands was reorganized with Deventer becoming an episcopal city.

In order to strengthen the Catholic clergy, in 1560 the Catholic city council of Deventer bought the 60 volumes left by a deceased parish priest and made them into a municipal library. It may well be that the foundation of that library in Deventer is connected with the aforementioned library in nearby Zutphen (like Deventer situated along the river IJssel). The reformation, however, could not be stopped. In towns where Calvinists took over, church property was confiscated. Ecclesiastical and monastic libraries were, sometimes after lootings, cleared of specifically Catholic material and turned into municipal libraries. These were run by Calvinist clergymen in cooperation with the municipal council and were usually accommodated in the choir of

Library of the Rijksmuseum in Amsterdam (1886)

Interior of the Public Library in Arnhem (1916)

Children's Department of the Public Library in Staphorst (1980)

STCN Bureau with Project Leader Jan Bos

Old Wood Print: August - Harvest Month!

Reading Room, Koninklijke Bibliotheek

Short-term Storage of Journals in the Koninklijke Bibliotheek, The Hague

former Catholic churches which had also been confiscated. The extent to which books were judged on the grounds of their unorthodoxy depended on the local authorities. Books were chained, and access to these municipal libraries (*bibliothecae publicae*) was largely confined to the urban elite. In some cases commoners were allowed to admire the books behind an enclosure. Opening hours were limited and restricted to usually no more than four hours a week. Nonetheless this new form of limited accessibility, like municipal management of libraries, represented innovative elements. Initial enthusiasm for these new institutions, however, soon faded. The city councils rarely purchased anything, although libraries did sometimes receive a bonus to acquire a special volume or collection. There was no fixed annual budget.

Another new phenomenon was the fact that these libraries started to print catalogues. These catalogues served to make the collection public but also to stimulate citizens to donate books to the library. In the library itself there often was a board listing the names of those who had indeed donated books (*nomina donantium*) while their names were often also mentioned in the catalogues.

Municipal libraries were among other places founded in Deventer (1560), Amsterdam (1578), Alkmaar (1594), Gouda (1594), Haarlem (1596), Rotterdam (1604), Dordrecht (1616) and Enkhuizen, (which, although small, is remarkable for the fact that its collection is even now still part of a church's museum collection). A unique position is taken up by the municipal library of Maastricht, founded in 1662. Maastricht, the most southern city of the Netherlands, was governed by a Catholic prince and bishop of Liège and the Protestant, Calvinist parliament in The Hague. The two librarians - one Catholic, one Protestant - acquired their collection while taking into account both religions.

Educational institutions, naturally, had to have libraries at their disposal too, and usually the municipal library was available for this purpose. In Amsterdam, for example, the municipal library was at the same time the athenaeum library and in Utrecht the university library (1616) simultaneously served as municipal library.

The first university in the Netherlands was founded in Leiden in 1575 and was initially primarily aimed at educating the clergy. William of Orange donated the multilingual bible (*Biblia polyglotta*) of the prominent Antwerp printer Plantijn to the young university. With books that had been purchased from the late professor Johannes Holmannus, a library was founded. The first librarian, Jan van der Does (Janus Dousa) was appointed in 1587 and in the same year the collection, which until then had been very modest, was given a room of its own. Some years later the library was moved to the Faliede Bagijn church at the Rapenburg in Leiden. The first printed catalogue of the library of Leiden, the *Nomenclator*, the oldest printed catalogue of a not privately owned library in the world, came out in 1595; 625 copies were printed. The catalogue was

Special Collections, Koninklijke Bibliotheek with A.M.T. Leerintveld

partly meant to stimulate the donation of books. It was systematically divided into columns, in accordance with the *pulpita* (bookshelves) and headed by the theological works. Folio editions were ranged separately, as were manuscripts and works that were written by professors of the University of Leiden. Even though books were sold, donations were the most important source of income. As was the case with other libraries, the directorship of the library at Leiden was a largely honorary position for a professor, a sinecure, with the actual work done primarily by the custos, a deputy librarian.

The library of the University of Leiden has become famous for its large collection of Western and non-Western manuscripts, among which works collected by the scholar Scaliger. Leiden also acquired the collection of Levinus Warner who, as an envoy to the Porte at Constantinople, collected many Eastern manuscripts around 1660. Secondly there was the Vossius collection which was purchased by the library in 1690. The curators felt however that too much had been paid for the Vossius collection which had been purchased in order to prevent the books from being kept in Oxford. This resulted in a juridical quarrel over payment which went on for many years.

The university library was open two afternoons a week and was rather like a museum in the way recent publications were not purchased. It mainly served as a supplement to the private library of the professors. The library offered only limited access to students and actually even remained shut to them over a period of 20 years. The students consequently turned to the curators with a petition and were ultimately granted access.

The University of Groningen, founded in 1614, owned a modest collection. As at other libraries professors here were given the *jus clavium*, a source of ongoing concern as keys were lent and copied, often resulting in theft. In 1581 the city council of Utrecht demanded the handing over of books belonging to monasteries in order to establish a library accessible to all. It took some time before the books were finally handed over and accommodated in a church. When the University of Utrecht was founded in 1636, the municipal library became university library as well. Small universities owning modest libraries existed in Harderwijk (Gelderland) and Franeker (Friesland). They were, however, closed down in around 1810, during the French occupation. The largest library is at present that of the University of Amsterdam (university library since 1877), founded in 1578 as a municipal library and from 1632 onward simultaneously serving as library for the Municipal *Athenaeum Illustre*.

Municipal educational institutes, such as gymnasiums and Latin schools owned smaller libraries and sometimes used the municipal libraries. The libraries of seminaries such as the Remonstrant Brotherhood in Amsterdam (1634) and the Baptist Seminary (1735) should also be regarded as educational institutional libraries.

The Jewish community in Amsterdam saw a considerable growth in the 17th century as a result of Spanish, Portuguese and Eastern European immigration. The Portuguese-Israeli seminary *Ets Haim* (Tree of Life) was founded in Amsterdam in 1637 and was a conglomeration of three Jewish libraries, together owning 246 volumes. The library was used by rabbis and students, including Spinoza. In 1889, the librarian David Montezinos donated a considerable collection of books to *Ets Haim* which consequently became one of the world's largest Sephardic libraries. During German occupation the Ets Haim-Livaria Montezinos Library was transferred to Germany but was returned to Amsterdam in 1946. A kind of "special libraries" already existed in the 17th century and served members of the city council and the judiciary (administrative-juridical libraries). These libraries mainly contained law works, but books on other topics, donated by their authors, were also part of the collection. The provincial courts of justice like the High Court of Holland and the High Court of Gelderland had juridical reference works at their disposal as did members of parliament.

Even though Catholicism was not directly forbidden, public practice was not allowed. The Pope in Rome considered the Netherlands a missionary area where the clergy secretly performed their pastoral tasks, making use of small parish libraries.

The *Bibliotheca Thysiana* (ca. 1650) in Leiden deserves a separate mention here as it is even today still arranged in 17th century fashion. The library is small and was founded by the wealthy citizen Johannes Thysius.

In the 17th century, specialized literature related to library science began to appear in Europe. The best known work from that period is the *Avis pour dresser une bibliothèque* by the French librarian Naudé which appeared in 1627. The German librarian and homo universalis educated G.W. Leibnitz (1646-1716) volunteered many suggestions as to how to improve bibliographical aids and the description of books. The Dutch minister and scholar Johannes Lomeier (1636-1699) published a comprehensive survey *De bibliothecis liber singularis* (Zutphen 1669; a second edition appeared in Utrecht in 1680). In this work Lomeier wrote a chapter entitled De bibliothecis celebroribus in which he gives short descriptions, based on travel accounts, of around 130 renowned (some of them private) libraries in Europe. Lomeier's account is arranged according to country and region and has proved useful for foreign writers who have used the work as a source for their own library guides.

In the 16th and 17th century, thus, some dozens of mostly small libraries could be found in the Netherlands. The library of the University of Leiden was the largest and wealthiest by far, possessing approximately 20,000 works around 1700.

Travel journals written by foreigners, like that of the German scholar Z.C. Von Uffenbach, who visited some libraries in the Netherlands around 1700, indicate that their authors were far from impressed by these Dutch libraries as they contained no elaborately decorated or stately rooms. In the light of Dutch Calvinist civilization, where austerity was considered a virtue and the nobility played a relatively minor role, it is no surprise that Dutch libraries were as sober as they were. The local governments spent little money on libraries. Municipal libraries ("town jewels") that had been founded with great enthusiasm around 1580 gradually fossilized in the second half of the 17th century. Few people now visited these institutions; recently published work was not available and the majority of the books were of a theological nature. The ordinary citizen who wanted to read was forced to buy his books as did professors who only applied to the library for older, valuable volumes and manuscripts. Libraries thus became more like museums. They were also, especially by current standards, often badly furnished, unheated and with limited accessibility.

Enlightenment to the Second Industrial Revolution, 1750-1880

The 18th century, the Age of Enlightenment, brought a revolution in reading: citizens wished to educate themselves, bookshops expanded and, in the world of science, too, the vernacular gradually took over from Latin. Educated citizens started a so-called "refinement offensive" intended to civilize the lower classes. The latter half of the 18th century consequently brought new literary genres such as handbooks, encyclopedias, novels, general cultural and political writing as well as new types of libraries all over the Western world, including the Netherlands.

A very important contribution to the development of the reading culture were reading societies. However, since these did not found libraries of their own but sold their books to their members, they will not be dealt with here.

New types of libraries that were established in the Netherlands from the mid-18th century onward were commercial lending libraries, society libraries and popular libraries. All three have played an important role in the distribution of enlightened ideas and owe their existence to the initiative of individual citizens.

The first commercial library in the Netherlands is thought to have been founded around 1750, around the same time as in France (but later than in Germany and England) and was that of a bookshop owner from The Hague, Scheurleer. He used a series of advertisements in papers such as the *`s-Gravenhaagse Courant* to make his "public library", consisting of 2000 volumes, known to the public. In Scheurleer's library one was able to borrow books on the base of an annual subscription or against payment of a separate rental fee for each book. The library existed for approximately ten years, after which Scheurleer is thought to have been forced to sell his business due to the pressure of fellow bookshop owners who felt that bookshops were being disadvantaged as a result of the lending of books.

In other cities too, there have been lending libraries but it seems that the real growth of the commercial library occured from approximately 1830 onward. They were usually linked with bookshops or stationer's shops and were, judging by the rental fee, initially meant for the affluent middle-class. This was to change with the arrival of lending libraries offering light, lowbrow reading material at the end of the 19th century. Commercial lending libraries offered mostly recently published novels and informative books.

Seven prominent citizens from Haarlem founded a learned society in 1752 based on foreign models. This Hollandsche Maatschappij van Wetenschappen (Dutch Society for Sciences) often held meetings at which lectures were given. Furthermore, competitions were held and a natural history museum as well as a library were built.

A particularly fine library was given to the Teyler Stichting (Teyler Society, 1778) in Haarlem which, in the 19th century, as a result of trading, obtained the largest collection of foreign, natural scientific, journals. The first librarian was the great scholar Van Marum who was responsible for the library's opening to the general public in 1824. The large oval room dating back to approximately 1780, as well as the library dating from 1880 are both library monuments, as are the libraries of Zutphen and the *Bibliotheca Thysiana* in Leiden.

In other cities too, academic associations, often of a specialized nature like the Maatschappij der Nederlandsche Letteren (Society for Dutch Literary Science) in Leiden, were founded around 1775. The library belonging to this society, accommodating the largest collection of Dutch literature, was lent to the University of Leiden in 1876. From an architectural point of view it is interesting here to mention the library building of the *Natura Artis Magister* society, established in Amsterdam in 1837. Most libraries belonging to academic societies were accommodated in university libraries at the end of the 19th century.

Reading circles were organizations where the upper middle classes and a city's dignitaries were able to read, and sometimes borrow, newspapers, journals and books. Some of these were at the same time clubs and included conversation and smoking rooms. From approximately 1775 onward these reading circles could be found in various cities throughout the Netherlands. The most important one was the Amsterdamsche Leeskabinet (Reading Circle of Amsterdam), founded in 1800. This reading circle functioned as a kind of supplement to the Athenaeum library as the former offered a collection of recent literature, something the Athenaeum library did not.

In 1784 the Maatschappij tot Nut van `t Algemeen (Foundation for the General Benefit) was founded, dedicated to the elevation of the common man, a philosophy fitting the atmosphere of enlightened Christianity of that era. With this purpose in mind the foundation offered tuition, published moral guidelines and founded savings banks and popular libraries. Their first library was founded in Haarlem in 1794 and 50 years later 300 existed throughout the country except in the entirely Catholic provinces of Limburg and Brabant. The various branches enjoyed a great deal of independence and this rendered the central committee unable to ensure that "enlightening" books were purchased, as had been the original intention. This meant that particularly from approximately 1830 onward, the libraries of the foundation largely contained light, lowbrow reading material. The volunteers, mostly teachers and ministers, who ran the library felt that these books were what people were asking for. The foundation's libraries never contained reading rooms as they lent their material - especially in winter, the reading season *par excellence* - and were usually small, owning no more than several hundred volumes. Sometimes these libraries included a separate children's library.

In the course of the second half of the 19th century Catholics and the Calvinist middle class emancipated, led by their respective clergy. This resulted in the sharp division of the Dutch nation in terms of religion; "pillarization", including a Protestant, Catholic and a non-denominational pillar. Each one of these pillars had separate educational institutions and the primary goal of each one of these groups was the subsidizing of its own particular system. Separate Protestant and Catholic popular libraries were founded as well and were run by volunteers. These libraries contained lowbrow reading material and did not possess reading rooms.

The French Revolution, the invasion of French troops, the Batavian Revolution and the Dutch dependence on France that followed, had many consequences for the library system in the Netherlands. The most important was undoubtedly the founding of a National Library in The Hague in 1798. The core of this library's collection consisted of books expropriated from the exiled stadhouders (governors) of Orange. In charge of the library was professor Charles Sulpice Flamant, a French priest and refugee who had mastered the Dutch language.

Initially the idea was to open the National Library only to members of the legislature and other public servants but by order of the chamber of representatives "well-known persons", after obtaining permission by the library committee, were granted access as well. Opening hours were, particularly in comparison with other libraries, extremely generous: every weekday from 10 a.m.to 5 p.m. as well as from 5 p.m. to 7 p.m. three nights a week. Later these opening hours were sharply reduced. A library catalogue was published in 1800 and contained over 5000 entries.

During the time when Louis Napoleon, appointed by his brother Napoleon Bonaparte, reigned over the Netherlands (1806-1810), the Koninklijke Bibliotheek (National Library) underwent considerable growth. Louis Napoleon had a strong interest in libraries and, as a result of the introduction of legal deposit and the acquisition of large amounts of books, the library's collection increased. King Louis Napoleon also founded an academy, later named the Koninklijke Nederlandse Akademie van Wetenschappen (Dutch Royal Academy of Sciences), which was to build up an important collection in the course of the 19th century. There was a great deal of trading with libraries both within as well as outside the Netherlands.

Louis Napoleon was, however, deposed by Napoleon Bonaparte, who was dissatisfied with his brother's policies. The Koninklijke Bibliotheek obtained the name of Grote Hollandsche Bibliotheek (Great Library of the Netherlands) by decree and was given to the city of The Hague. In 1811 the French transferred a number of books and particularly prints from the library in The Hague to a library in Paris, that of the Napoleonic Université Impériale. After Napoleon's fall the greater part of this looted collection was returned to The Hague. The French also planned the transportation to Paris of a number of books from Dutch municipal and university libraries. They therefore ordered local officials to make precise inventories of the manuscripts and precious volumes in their libraries' collections. This time-consuming plan was never realized, possibly as a result of sabotage by the Dutch librarians.

During the reign of King William I (1814-1840) the independent kingdom of Holland was founded and, until 1830, also included Belgium as well.

The city of The Hague allowed its library to be expanded with around 7000 volumes from the former Orange library in Dillenburg in order to again become the Koninklijke Bibliotheek. The University of Leiden was given priority among other universities and was funded more generously. The university libraries of Utrecht and Groningen (those of Harderwijk and Franeker had, by French decree, already ceased to exist), with more modest budgets, were considerably smaller.

After a period of economic stagnation and poverty a new era dawned around 1850, characterized by economic growth and certain social developments such as increasing liberalization, nationalism and scientific progress. All these factors contributed to remarkable modernizations within libraries. Two Dutch antiquarian booksellers and bibliographers, Frederik Muller and his apprentice P.A Tiele (1834-1889), played an important role in the creation of better catalogues. They were often burdened with the cataloguing of libraries.

New libraries such as the provincial, primarily historical, libraries of Friesland and Zeeland and the Rotterdamsch Leeskabinet (Rotterdam Reading Cabinet) were all founded around 1850 and collections of existing libraries grew faster than ever before. When libraries needed renovation, like the university library in Leiden, inspiration was drawn from abroad, specifically Germany. As early as the end of the 18th century the university library of Göttingen in particular was an internationally recognized model.

The Koninklijke Bibliotheek became a centre for the study of incunabula, thanks to librarians J.W. Holtrop (1806-1870) and M.F.A.G. Campbell (1819-1890). In

1856 the Koninklijke Bibliotheek incunabula catalogue appeared; other holdings were still inadequately catalogued. The number of inculabula in Dutch libraries is approximately 8,000.

The English Public Library Act of 1850 led to a movement in the Netherlands to establish public libraries by law. These efforts were in vain, however, since the liberal minister Thorbecke, despite being a lover of libraries, did not consider it the goverment's task to found public libraries. Moreover, the concept of what public libraries were to be was not entirely clear, as they were still being confused with reading cabinets and popular libraries. Popular libraries received a boost around 1850 as a result of the introduction of Catholic and Protestant popular libraries.

The aforementioned P.A. Tiele deserves a special mention here as an innovator of library practice. After a training in the international and antiquarian bookshop of Frederik Muller, Tiele opted for a career in the world of libraries. After having worked first as keeper of printed works at the university library in Leiden, Tiele went on to become librarian at the University of Utrecht. Tiele attached great importance to a good bibliographical apparatus and was responsible for the introduction of the printing of catalogue titles on paper in the Netherlands. Titles were then printed on cards and kept in looseleaf books - the so-called "Leidsche boekjes", a "sheaf catalogue".

From Modernization to Automation, 1880-1965

The end of the 19th century in the Netherlands was dominated by a dynamic modernization process. Industrialization increased, and imperialism - manifested in the conquest of the East Indies - resulted in the intensification of world trade. The government increasingly intervened in daily life, as was shown by social legislation and the introduction of compulsory secondary education. New literary and artistic forms broke through and natural science flourished under eminent scientists, including Nobel Prize winners such as Zeeman and Lorentz. Libraries were considered a vital element in science and development.

In Belgium, Paul Otlet (1868-1944) further developed the decimal classification system originated by the American Melvil Dewey in order to create the Universal Decimal Classification (UDC). The UDC in the Netherlands was used especially by company and government libraries. Academic librarians preferred to follow the system German academic libraries employed.

Around 1900, academic libraries resembling our contemporary libraries came into existence. Personnel were employed, budgets were fixed and libraries, as far as possible, acquired modern literature, becoming "laboratories" for academics and students. Collections grew considerably thanks to various donations and legacies from individuals but mostly from the libraries of small learned societies. One outstanding donation was that of the Jewish banker Rosenthal to the university library of Amsterdam, the *Bibliotheca Rosenthalia*, an extensive Judaic collection.

Two other types of library arose around 1900 as well: the modern public library and the company library. The great advocate of the new public library was Henri Ekkard Greve (1879-1957), who obtained his doctorate with a study on popular and public libraries.

The first public libraries were formed in Utrecht (1892) and Dordrecht (1898), soon to be followed by cities like Groningen, Leeuwarden and Alkmaar. Dutch public libraries were given their own, separate structure: institutions established by individual, progressive citizens requiring grants from the city council. From l909 on, whenever a city council agreed to support a library, the central government also provided grants, which were subject to strict rules. The collection had to exist mainly of informative literature, "immoral" works were forbidden and only a limited number of novels could be purchased.

A powerful advisory body for public libraries was the Centrale Vereniging voor Openbare Leeszalen en Bibliotheken (Central Body for Public Reading Rooms and Libraries), established in 1908. This organization offered courses and supervised compliance with the stipulations under which subsidy was granted. It was compulsory for public libraries to be a member of this organization. Libraries regarded it as their task, as socio-pedagogical institutions, to educate people by offering them morally sound as well as popular-scientific literature. Librarians employed at public libraries took their task as mentors very seriously. A university education for academic librarians did not come into existence until 1964.

Partly as a result of the high standard of public library collections, the average citizen kept borrowing his or her books from the popular reading library or preferred the commercial library that also offered light, lowbrow reading material. Only a very limited percentage of the population used the public library. In rural areas, public libraries were absent. A unique aspect of the situation in the Netherlands, compared to the rest of the world, is that in the light of the aforementioned "pillarization", confessional public libraries came into existence. The first was Roman Catholic, established in 1911 and later several Protestant libraries were founded. The denominational rift in Dutch society also split the public library world. Confessional public libraries received government grants too and were members of the Centrale Vereniging. They were allowed to concentrate on collecting literature compatible with their religion. Gradually the amount of Catholic public libraries in particular, grew steadily, as a result of which two kinds of public libraries usually existed in larger cities, both a Catholic as well as a general library. Together with a strong, centralized organization and "pillarization", the Dutch situation in the first decades of the 20th century could further be characterized by a succesful cooperation between public and academic libraries. In 1912 the NVB: Nederlandse Vereniging van Bibliothecarissen (Dutch Society for Librarians) was founded, accepting librarians from all types of libraries. This NVB published a magazine by the name of *Bibliotheekleven* (Library Life, 1916-1969) and organized lectures and conferences.

Around 1900 several large organizations, both within the private and the public sector, created libraries specializing in documentation in the sense of the making accessible of journals and grey literature. Examples of such libraries are those of Philips and the library of the Ministry of Economy.

In the 1920s the Koninklijke Bibliotheek, headed by P.C. Molhuysen, took a more central position within the library system in the Netherlands. The Koninklijke Bibliotheek gradually developed into a modern national library without obtaining this position officially until 1982.

Following the example of the Prussian Gesamtkatalog, a national central book catalogue was started by Molhuysen in 1921 and connected several dozen libraries. The governmental advisory body, instigated by Molhuysen, was the Rijkscommissie van Advies inzake het Bibliotheekwezen (State Advisory Commission for Library Matters). The Internationale Ruilbureau (International Exchange Bureau), for the exchange of publications between countries, was founded at the Koninklijke Bibliotheek in 1926. The library of the Dutch Royal Acadamy of Science became important for international exchange in the biomedical sciences. The library of the Technical College in Delft (now Technical University), under the engineer librarian, A. Korevaar, became the leading technical library in the Netherlands. The library of the Agricultural College (now Agricultural University) in Wageningen developed into the main centre of agricultural literature.

In the field of international law the library of the Vredespaleis (Peace Palace), donated by Andrew Carnegie in 1913, fulfills an important role. The image of Dutch libraries and librarianship profited from the promotion of the Dutchman T.P. Sevensma, librarian of the League of Nations in Geneva, to Secretary General of the International Federation of Library Associations (IFLA) in the l930s.

For documentation, particularly where expansion and improvement of the UDC was concerned, the Dutch engineer Frits Donker Duyvis was a very important figure. He was responsible for the shift of the headquarters of the main documentation organization (now the International Federation for Information and Documentation, FID) from Otlet's Brussels to The Hague, where it is now settled, as is IFLA, in the Koninklijke Bibliotheek building. The Dutch have always played a major part in these international organizations.

The 1930s, a time of crisis and unemployment, were particularly bad years for Dutch public libraries. The grants established in 1921 by the Government Grant Condition Act (deciding the size of a grant in accordance with community's population) were continually cut back. As a result, not a single public library was founded during this period.

In 1935, however, a unique institute was established by N.W. Posthumus, an economics professor, with financial support from a workers' insurance company. This was the Internationaal Instituut voor Sociale Geschiedenis (International Institute for Social History). The institute concentrated on purchasing socialist books, brochures and archives and developed into a "rescue organization" for those organizations in countries like Germany and Spain that were prohibited by fascists. The institute also purchased libraries in those countries and from exiled socialists from Russia. Academic staff were employed to organize the material and used it for studying purposes. The institute also published a journal in English.

Together with the Marx-Lenin Institute, the International Institute for Social History was to become a world centre for the study of the history of the labor movement. Earlier, Posthumus, who was not only a great scholar but also a shrewd businessman who succeeded in obtaining enough money to realize his plans, had founded the Economisch-Historisch Archief (Economic Historical Archives). Here, private company archives were held and an excellent library dedicated to economic history was founded. Both institutes are in Amsterdam and are part of the Dutch Royal Academy of Sciences.

During the First World War the Netherlands was neutral. As a result of the German invasion on 10 May 1940, however, it could not remain so in the Second World War. From 1940 to 1945 the country was occupied and ruled by the Germans. The damage inflicted directly by war acts remained limited, although as a result of the bombardments of Rotterdam, Middelburg and Nijmegen important libraries were destroyed. The most important consequences of the occupation concerned the public libraries and those libraries that were considered important from the point of view of the German Nazi ideology. Jewish personnnel was dismissed, Jews were not allowed to make use of libraries, and numerous books from public libraries were prohibited as they were considered "in opposition with national-socialist ideology".

Those in charge of the Centrale Vereniging voor Openbare Leeszalen en Bibliotheken (Central Body for Public Reading Rooms and Libraries) complied with the German measures in order to ensure at all cost that libraries remained open to the public. They feared that any resistance on their part would result in the Germans handing over the libraries' direction to the Dutch collaborators, those that were members of the Dutch national-socialist movement, the Nationaal-Socialistische Beweging (NSB). Another argument for continued compliance was the fact that the number of library users had increased enormously and that during the war the amount of people that borrowed and read books was considerable.

The German censorship was not only relatively arbitrary, it also proved disastrous for public libraries as all kinds of German and Dutch organizations obeyed orders, resulting in elaborate lists of banned books. In 1942 all books from English and American authors who had died after 1904 were forbidden.

Looting was done primarily by two German organizations; the *Einsatzstab Rosenberg* and the *Reichssicherheitshauptamt*. The library of the International Institute for Social History was brought to Germany as were the *Bibliotheca Rosenthalia*; a major collection of Jewish literature, and numerous other Jewish libraries and libraries belonging to free masons. The Jewish libraries became part of the *Rosenberg Institut zur Erforschung der Judenfrage* in Frankfurt. As a result of the bombardments on Germany carried out by the Allied Forces, stolen books were sent on a genuine odyssey through the Reich that was becoming smaller and smaller. The Germans lacked time as well as trained personnel to organize the lootings. After the war, books, often still in chests, were found scattered throughout. In the 1950s books returned to the Netherlands from countries as far as Poland and the Soviet Union. The collections belonging to the International Institute for Social History and *Bibliotheca Rosenthalia* were recovered almost entirely intact.

During the Second World War the importance of libraries for especially technical data acquisition was recognized. Proof of this was the founding of the Sectie Speciale Bibliotheken (Department of Special Libraries) within the national society of librarians in the Netherlands in 1941 which was the first specialized branch.

The Dutch government, in exile in London, took measures during the war in order to ensure that missing volumes of periodicals and important books, which Dutch libraries had been unable to acquire, were purchased from English and American publishers. During the laborious recovery after the war many Dutch libraries enjoyed donations by American and English libraries.

Despite the experiences during the Occupation, the Dutch, after their liberation, attempted to restore the pre-war situation. For public libraries this meant the maintenance of "pillarization" and the remaining division of the Dutch public library system between public, Catholic and Protestant. A new element was the growing attention to public libraries for the youth and for those in the country. As a consequence, ("pillarized") county libraries were founded, bookmobiles started operating, and many public libraries obtained youth sections.

The Birth of the Virtual Library, 1965 - Today

From the mid-1960s onward the Dutch library system has, like those in the rest of the world, seen a great many changes and, especially in the last decade, has witnessed a continuous renewal. The causes of these changes can be found within society and technology. First of all, on a social level, "pillarization" started to rapidly disappear from around 1970. In a major fusion, general, Catholic and Protestant public libraries merged together into the one general, public library. At the same time popular reading libraries and commercial libraries disappeared as they could no longer compete with public libraries.

A new, umbrella organization, the Nederlands Bibliotheek en Lectuur Centrum (NBLC: Dutch Centre for Library and Reading) for the public library system was founded in 1972.

The NBLC, following in the footsteps of the former Centrale Vereniging van Openbare Leeszalen en Bibliotheken, became the governmental advisory body but also concentrated on offering central services to public libraries. The NBLC developed a central acquisition information service, directed cataloguing and supplied finished books to libraries. Thus, a unique situation arose in the Netherlands where public libraries could appeal to a single organization for all sorts of activities. In 1975, the Public Libraries Act (Wet op het Openbare Bibliotheek Werk) was passed, determining among others that young people under 18 were given free membership. As a result of this the number of users rose tremendously; approximately 25% of the Dutch population was registered at one of the public libraries. The Public Libraries Act provided a generous financial arrangement and major expansion of the number of public libraries. The cuts witnessed in the 1980s sadly put a spanner in the works and in 1987 the act was repealed.

The blooming of the public library system between 1965 and 1980 is closely related with the sharply increasing social prosperity which also proved beneficial to scientific libraries. The number of students at universities and colleges of higher education also increased considerably and within the field of education, changes took place such as the introduction of papers and theses, putting universities under great strength. With this in mind a new type of library, the regional supporting library (Regionale Steun Bibliotheek), was established in 1969. This was not an independent library but was added, as a collection, to another 13 or so existing libraries. These were large public libraries with academic collections, reserach libraries such as provincial libraries, which obtained extra funding in order to expand their collection of academic books. "Depillarization" and loss of faith have led to the closing down of many religious institutions. Many theological collections have been bought up by university libraries.

The regional supporting libraries were meant primarily to benefit those studying outside the universities. Cuts and drastic changes within the educational system, especially the concentration of small colleges of higher education within much larger institutes, have led to regional support libraries acquiring a new name ("WSF" libraries; libraries with a supporting academic function) and new tasks. Information technology has led to drastic change all over the world, including the Netherlands. New ground was broken in relation to the automation of libraries in the 1960s by Excerpta Medica, the medical information system of Elsevier publishers and by Pica (Project for Integrated Catalogue Automation). Pica, established in 1969 by the Koninklijke Bibliotheek and several university libraries, has acquired a dominant position as developer of local and national library systems. Pica is gradually embracing all types of libraries, including the public libraries. Pica is evolving from a project for shared cataloguing to a truly national information network. It exploits a great number of online retrieval systems in numerous areas and maintains good relations with countries abroad. The Koninklijke Bibliotheek, which moved to a new building in The Hague, next to that of the General State Archives, in 1982 and was legally appointed national library on that occasion, has, especially over the past 25 years, played a central role within the Dutch library system. From 1974 onward the Koninklijke Bibliotheek, not being a copyright library, has had a voluntary depot, as opposed to one imposed by law, which is functioning satisfactorily. Also housed in the same building are the Museum and Documentation Centre for Dutch Literature, the headquarters of IFLA and FID, as well as several other institutions.

To conclude this historical survey there are some important developments to discuss that have occurred during the past decade.

With regard to organization, the following institutes have proven important: the NBLC (for public libraries), the UKB (cooperation between university libraries and the Koninklijke Bibliotheek and the library of the Royal Academy of Sciences) and FOBID (Federation of Organizations for Library and Documentation). As governmental advisory body there is the Cultural Council with its library section; a special Library Council, unfortunately, no longer exists.

Educational institutes have seen a great many changes. There are, for example, no specific library schools anymore; institutes now aim at the education of information managers who are also able, and probably more likely, to find employment within trade and industry. The existing six academies (Bibliotheek en Documentaire Informatie; Library and Documentation Information) in the autumn of 1996 named themselves Schools for Information Service and Management (IDM; Informatiedienstverlening en Management). One of these is the School for Book, Information and Archive Sciences in Amsterdam. The University of Amsterdam offers a postgraduate course. More traditional courses, aimed at library work, are offered by the GO (Gemeenschappelijke Opleiding; Combined Institute) and vary from basic to postgraduate level.

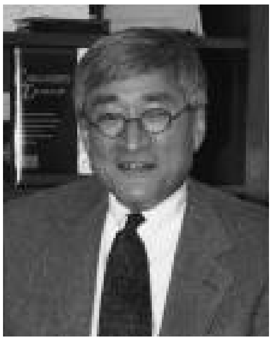
From around 1990 onward, virtual libraries and "libraries without walls" have came into being. These terms describe libraries that, apart from giving access to its own collection, are also connected to online extensions and thus enable the user to consult and request material from anywhere at all. In the Netherlands, an important aspect of this new development is the OBN (Open Bibliotheek Netwerk; Open Library Network) enabling users to consult and request material from the National Central Catalogue, the NCC, which consists of the titles of approximately 10 million volumes and 350,000 periodicals. Journal articles and books can be ordered through the IBL account (interlibrary loan traffic). Partly due to activities by Pica the automation of libraries has grown considerably and succesfully over the past decade.

Automation and economization can serve to characterize the situation in the Netherlands very crudely. Public libraries are active with regard to mechanization e.g., by connecting to Internet. They cannot, as was the case before 1987, automatically count on government support but are dependent on financial means supplied by the local municipality. As a consequence, libraries, even more than before, have turned to the user (e.g., by handling of varying fees) and are developing new kinds of services, such as community information.

A considerable problem for academic libraries is the fact that as a result of the reduction of means, the sharp rise of prices (especially of subscriptions to periodicals) and the growing supply of reading material, collections have seriously declined. Especially in relation to the humanities, several institutions have recognized that many important titles are not available in the Netherlands. There have indeed been appointed four libraries with a national rersponsibility, but this measure has not provided the necessary success. Libraries with a national responsibility are the Koninklijke Bibliotheek (humanities), the library of the Wageningen University of Agriculture and the DLO-Pudoc (agricultural sciences); the library of the Dutch Royal Academy of Science (biomedical sciences); and the library of the Technical University Delft (technical sciences). These libraries receive extra funding in order to acquire foreign academic literature.

Since 1 January 1997 two Dutch professional journals have changed their names. The journal for scientific and special libraries *Open* (Open) became *Informatie Professional; Bibliotheek en Samenleving* (Library and Society) is now called Bibliotheekblad (Library magazine).

Peter R. Young



As of June 1997 Peter R. Young assumed the position of Chief, Cataloging Distribution Service at the Library of Congress. Prior to that appointment, from 1990 to 1997 he was Executive Director of the US National Commission on Libraries and Information Science located in Washington DC. Mr Young has held professional positions in college, university, research, and public libraries. He also has government and industry experience. At the Faxon Company he directed Academic Information Services and the Faxon Institute for Advanced Studies in Scholarly and Scientific Communications (1988-1990). Mr Young is a member of the American Library Association and has served on committees of LITA, LAMA, RTSD, PLA and ALA. He was President of the Chinese American Librarians Association and was Co-Chair of the Library Statistics Standard Revision Committee of the National Standards Information Organization. He is a Standing Committee member of IFLA's Section on Statistics, serving a second term, to be completed in 2001. Mr Young may be contacted at the Cataloging Distribution Service, Library of Congress, Washington DC 20540-4910, USA (fax: +(1-202) 7073959; e-mail: pyoung@loc.gov).

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Measurement of Electronic Services in Libraries: Statistics for the Digital Age

Introduction

How should libraries measure electronic services and media? How should libraries be tracking Internet/World Wide Web usage? What is needed to support library access to electronic information? What defines an electronic session? Should libraries be counting "hits" or "clicks" each time a patron accesses a file, visits a Web site, displays an image, or downloads a page or a document? What statistics should libraries collect on electronic access to remote resources not owned by the library? How are technology and telecommunications expenditures related to electronic media and services affecting libraries? Can conventional library statistical concepts, standards, categories, definitions, and data elements be extended to include electronic media and network services? Will library statistics on electronic services facilitate development of output measures and performance indicators?

These difficult and troublesome statistical questions result from the rapid adoption and integration of electronic media and services by all types of libraries.

Conventional library statistics address a wide range of purposes and functions: administration and management; analysis and planning; policy development; and research. Conventional data about library activities and information services are collected and reported at the institutional, state, regional, national, and international levels. These library descriptive statistics reflect varying levels of comparability, consistency, and comprehensiveness. However, agreement about timely, reliable, and relevant statistical information regarding electronic media resources and services in libraries has yet to emerge. This article raises questions and explores issues related to library measurement of electronic media and network services. Investigation of statistics describing electronic information technologies are critical for organizational efficiency, effectiveness, and performance.

Difficulties in Measurement of Electronic Services in Libraries

This article results from work by the U.S. National Commission on Libraries and Information Science (NCLIS) since 1994. Although focused primarily on public library Internet connectivity[1-3], this recent Commission work considers general issues about library measurement of electronic media and network services. These issues include the following difficulties in the measurement of these media and services:

- Difficulties in developing standard definitions for electronic media and services related to costs/expenditures for the following:
  - System/server hardware - local integrated systems, terminals, desktop computers, servers, printers, and scanners
  - Communications services - telecommunications lines, cabling, routers, modems, network service provider fees, and local area network (LAN) charges
  - Software-operating systems, site licenses, applications software, new releases/upgrades,

user authentication and validation, and blocking/filtering software

- Training and education - staff training, user education, documentation, and user support services
- Facility upgrades/maintenance - building renovation, cabling and wiring, and equipment
- Content/resource development - collection development, formatting, graphics development, site design and maintenance, and commercial arrangements
- Programme planning/management/staffing - staff recruitment, budget preparation, program analysis, planning, and consultation

- Difficulties in developing standard definitions for measuring the impact of collaborative and cooperative activities between/among libraries and other institutions in providing electronic media and services
- Difficulties in accommodating successive new generations of systems and software release changes, and in addressing obsolescence
- The open and unrestricted nature of network services makes control, regulation, and planning difficult
- Difficulties resulting from complex telecommunications infrastructure technologies and rapidly changing bandwidth pricing structures
- The challenge of keeping current with rapid pace of change in business and pricing practices from electronic content publishing industry and network service providers
- Confusion and uncertainty relating to document delivery services and "fair use" of copyrighted material in electronic format
- Lack of standards for quantitative measurement of electronic multi-media works or objects, or for derivative works
- Difficulties in relating conventional transaction-based library statistics to interactive electronic networking activities.

In general, the measurement of electronic media and services presents significant challenges for libraries and the evolving information services field. Standard statistical methodology, definitions, structures, and categories for describing digital media resources and services are essential for library management and planning. The rapid pace of technological change, together with the early adoption of electronic information and digital communications technologies by the global library community add to the critical importance of these concerns. To manage the changes resulting from these electronic and networking technologies, standard measures and descriptive statistics need to be formulated. The future relevance and viability of the library's mission in the emerging age of digital information requires that these difficult issues be addressed.

Approaches to Electronic Information Service Measurement

It is hard to overestimate the impact that information technology has had on libraries in the last several decades. At the same time, however, the impact of this rapid technology adoption challenges conventional library statistics and measurement concepts. Simple extension of conventional descriptive statistical structures relating to libraries raises difficulties that seem to require the development of new measurements based on electronic commerce than from library statistical standards. These new electronic service offerings may, at a fundamental level, require the reconceptualization of library quantitative measurement.

Such a reconceptualization may involve measurement of information technology-based media and services in libraries based on a combination of approaches such as the following:

- *Transaction-based measures* - where interactive sessions, downloads, hits, terminals/patron, domain and host addresses, images, or files are counted, recorded, and measured by sampling or by transaction logs
- *Time-based measures* - where available service hours, session length/duration, system/server peak level are measured and reported
- *Cost-based measures* - where measures are made based on cost/expenditure for telecommunications/bandwidth, terminal/hardware equipment, staff, training, maintenance, site licenses
- *Use-based measures* - where user activities, anticipated demand, simultaneous users, group use, hits/patron, user satisfaction, local or remote/off-site use is measured.

These approaches for measuring electronic services can be compared with the following trends and requirements:

- Efforts to define and measure remote access and use of local electronic media resources in libraries are matched with efforts to identify and track local use of remote resources
- Network log analysis software and Web-counters are available which provide information about domain and host Internet traffic, but it is uncertain how such commercial programme reports can be used by libraries in measuring electronic media and services
- Libraries are increasingly offering access to metadata to help users to identify/discover electronic media resources and services, but at

present, there appear to be no standards for measuring or reporting metadata (or OPAC) availability and usage

- The traditional library measurement orientation and focus on acquisitions and collection ownership appears to be shifting towards the need for information about library users and especially on statistics related to their service needs
- Electronic information media and resources are increasingly used in disintermediated settings where users have little contact or interaction with library staff
- There is a trend toward libraries serving as the point-of-contact for locally mounted electronic media resources accessible from different sites on campus or from branches
- The electronic environment is reducing traditional differences and distinctions between types of libraries, and between libraries and other information-based organizations
- Negotiating site licenses with electronic information service providers requires that the library provide the anticipated number of potential simultaneous users for a particular resource or database
- With no standards for the number of terminals required per user, increased demand for access to electronic media and network services has forced some libraries to employ sign-up/queueing sheets to allocate access in limited-time increments
- Libraries are creating navigational or finding aids by "data-mining" activities that establish electronic links to and among digital and print resources, but it is difficult to measure this activity or the effectiveness of these investments

Standards for Measurement of Electronic Information Services in Libraries

This article began by posing a series of difficult and troublesome questions related to the adoption of electronic media and services in libraries. In many ways, these questions offer an opportunity to re-examine basic library statistical concepts. The questions reflect the pervasive influence of electronic information technology on all aspects of library operation and measurement. Statistics about library collections, services, finances, staffing, usage, and transactions are influenced by increased library involvement with electronic media and services. But, along with the challenges, appears an inherent promise for measuring the needs of library users.

Internet/WWW use logs offer the potential for identifying local and remote users of electronic media and services through system-generated information that libraries could employ to track and profile users and their specific needs. This type of information can involve the capture of new data about who uses what resources, but it may also involve libraries in sensitive issues related to patron confidentiality. While conventional library statistics about patron behavior provide data that reflects use of collections and services, electronic measurement of library use offers more detailed information about customers of specific electronic media resources and services not owned or provided by the library. Additionally, measurement of electronic media and services use offers the potential to identify users' expectations and satisfaction.

While the deployment and widespread use of global information systems like the Internet and the World Wide Web promise expanded access to a wealth of new information resources in a networked environment, electronic services also present new challenges to existing systems for measuring library activities and services. The following highlights summarize these challenges presented and discussed at the 1997 IFLA Council and General Conference in Copenhagen.

Shared/Cooperative Library Arrangements for Electronic Services

Many US libraries have developed cooperative and shared arrangements for network access to electronic information resources and services. Electronic services in libraries involve a mix of commercial and non-commercial support services. This complex variety of multi-institutional and mixed vendor support alternatives (for multiple network service providers, telecommunications configurations, and content resources) challenge the development of standard measurements for electronic library services.

Digital Object Identifiers

Publishers and intellectual property owners are currently evolving data structures for managing intellectual property using the notion of digital objects as packages, containers, or structured bit sequences. These digital commerce developments involve packaging digital content together with metadata as digital objects were persistent unique identifiers to facilitate access. These developments will offer libraries electronic alternatives to collection unit measures such as volume, titles, issues, articles, etc., and will help clarify current confusion over "hit".

Local and Remote Access to Electronic Services in Libraries

There is current lack of agreement about standard means of measuring access to electronic resources that are maintained locally (e.g., CD-ROM, access to a locally maintained server) compared with network access to electronic resources that are remote. Access to online public access catalogue information adds further complexity to the local/remote data collection and measurement challenges.

While libraries have developed conventional quantitative standards for traditional print-based collections and services, electronic information services may provide libraries with opportunities to gather qualitative information concerning performance effectiveness and outputs. This potential offers a rich area for libraries. For libraries to respond effectively to demands for greater accountability, evaluation, and efficiency, they require new assessment tools to measure impact. The instruments provided by electronic technologies may supply those tools needed to plan for the future during times of fluid change and uncertainty.

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Donald B. Simpson

Since 1980 Donald B. Simpson has been the President and Chief Executive Officer of the Center for Research Libraries, founded in 1949 as an international consortium of research institutes dedicated to making available library materials needed for serious scholarship in all fields and languages. In this capacity he guides and directs the activities of a multifaceted programme of cooperative collection development featuring access and delivery of scholarly materials based on a 5.5 million volume research and library depository located in Chicago, Illinois, USA. Over a 28-year professional career in librarianship, he has held senior management positions in library cooperation at the state, regional and national levels. During graduate studies in public administration and library science, Mr Simpson focused on the management of information systems at Ohio State University and library science at Syracuse University. His undergraduate degree was earned in English Literature at Alfred University. Mr Simpson has published more than 30 articles on interlibrary cooperation and four editions of a directory of state library agencies. his experiences include numerous consulting and speaking engagements, extensive service on boards and committees, representation of the United States to a UNESCO world conference on libraries, and election as a division president of the American Library Association. His current professional interests include improving scholars' access to research materials, enhancing the use of research libraries via the Internet, and digitizing research library collections. Mr Simpson may be contacted at the Center for Research Libraries, 6050 South Kenwood Avenue, Chicago, Illinois 60637-2804, USA (fax: +(1-113) 9554339; e-mail: simpson@crlmail.uchicago.edu).

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Economics of Cooperative Collection Development and Management: The United States' Experience with Rarely Held Research Materials

The Mission of the Center for Research Libraries

The Center for Research Libraries (CRL) is a membership consortium of institutions with significant academic and research libraries. It is an independent, not-for-profit corporation located in Chicago in the United States. The mission of CRL is to foster and advance scholarly and scientific research through cost-effective, cooperative programmes that provide reliable access through traditional and electronic means to unique and unusual collections of library materials that are in all appropriate formats, international in scope and comprehensive in disciplines. CRL is unique among library cooperatives that support scholarship due to its centralized library collection of over 5.5 million volumes in paper and microform, its cooperative, membership-based governance structure, and its programmes that enable institutions of higher education to optimize their expenditures for library materials.[1]

The Center for Research Libraries was established in 1965 by 22 midwestern United States universities that had become members of the Midwest Inter-Library Center (MILC), CRL's predecessor organization founded in 1949. The idea behind the original cooperative was to effect a creative solution to a conflict between university presidents (who did not want to construct additional library facilities on their campuses) and librarians (who asserted the research value of the volumes increasingly crowding their libraries' shelves). The university presidents believed that a regional depository library would alleviate the space problems in their overflowing libraries. The librarians asserted that a specialized collecting programme at CRL could build a collection that would meet some of the more esoteric

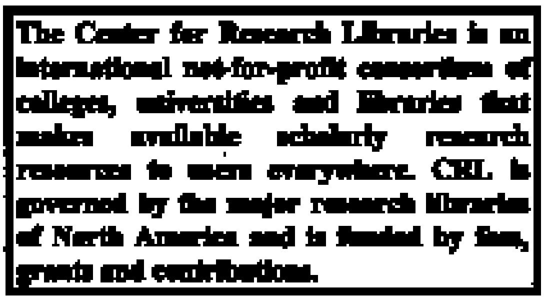
The Center for Research Libraries is an international not-for-profit consortium of colleges, universities and libraries that makes available scholarly research resources to users everywhere. CRL is governed by the major research libraries of North America and is funded by fees, grants and contributions.

Figure 1

demands of their researchers. It was a desirable merger of interests.

The Rockefeller Foundation and the Carnegie Corporation funded the construction of CRL's original building and the programme got underway. As soon as the building was completed in 1951, the founding libraries identified books, journals, documents, and bound volumes of newspapers that were infrequently used by their patrons and, throughout the 1950s, transported to the new cooperative approximately two million items to be processed and shelved. In addition to accepting materials from its member libraries, CRL began in the 1960s a programme of direct acquisitions from publishers, scholarly societies, and national governments in response to a demand for materials going unmet by the Farmington Plan. What began as a repository to reduce the pressure of collections expanding beyond the availability of physical space to house the collections shifted gears into a programme of cooperative collection development. CRL moved beyond the storage of a stagnant collection of unused library books. Over its 48-year history, major universities and research institutions in the United States and Canada have shaped their libraries' collections based on CRL's holdings. The success of the cooperative collection development program depends heavily on the ability to rapidly supply materials through interlibrary loan and document delivery to requesting libraries, which requires efficient book retrieval and document supply operations as well as excellent and highly visible bibliographic access. The acquisition of an item by CRL implies that it will be available indefinitely, which means that preservation quickly became an important part of the programme.

CRL expands access to library resources for university faculty and researchers through its cooperative collection development programme. Its valuable holdings, of interest to scholarly researchers, are likely to be used infrequently in any one library; which makes it prudent for libraries to support and utilize a centralized resource that effectively reduces the cost of access to such materials. By committing their membership fees to the cooperative acquisition and storage of these materials, each CRL member increases the research materials available to all scholars throughout North America while avoiding unnecessary duplication of holdings and costs.

Each member library considers CRL's collections to be a remote extension of its own local collections - in other words, a branch library. CRL informs researchers about the titles it holds by contributing its cataloguing records to the most frequently consulted online international bibliographic databases and making its own catalogue, CRLCATALOG, accessible via the World Wide Web. When a researcher learns that titles of interest are available at CRL, his or her university library sends an electronic request to CRL. Whenever possible, the information is transmitted to the requester by fax or ARIEL™; books or microfilms sent out on loan are sent by expedited shipping to the requesting library. About one-half of the use of the collection is accomplished through the interlibrary loan process with 100,000 items sent out each year in response to requests. CRL also maintains a reading room where scholars may consult materials; last year, patrons submitted almost 1,000 requests to the reading room.

CRL GOALS

- Enhance traditional library programs
- Expand all forms of access
- Expand digital resources and services
- Collaborate widely
- Stimulate new revenue
- Improve communications
- Manage resources well remembering who pays the bills
- Provide value!!

Figure 2

The Programmes of the Center for Research Libraries

The Center for Research Libraries operates a cooperative collection development programme (see Figure 3) that assists academic and research libraries in reducing the costs of making rarely held primary research materials available to scholars and researchers. The cooperative collection development programme collects, preserves and provides access to these research materials in print, microform and electronic formats. The cooperative collection development programme is based on CRL's first

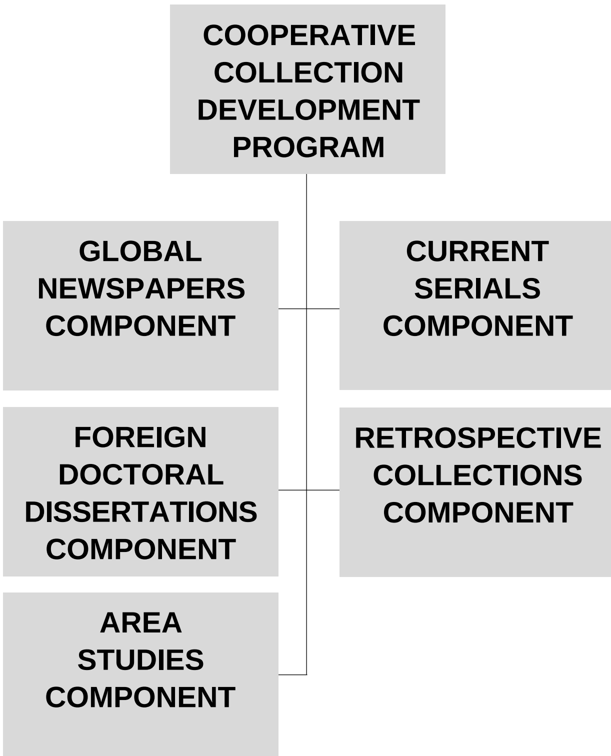

Figure 3

strategic asset - a large centralized collection consisting of five major components upon which member libraries make local collecting decisions. The components are expensive to collect in relation to their use at any one institution, but are made cost-effective through the application of CRL's second strategic asset - the CRL interlibrary cooperation model, which holds the materials centrally for shared use. The cooperative collection programme is further strengthened by CRL's third strategic asset - its experienced staff with substantial capabilities to develop and successfully complete inter-institutional resource-sharing programmes. Members greatly reduce the per-library costs of acquisition, processing, preservation and use of carefully selected library materials held in shared ownership by CRL. The components are expensive to collect in relation to their use at any one institution, but are cost-effectively available when held in common and supported through pooled resources.[2]

Global Newspapers

Newspapers are acquired by the Center through purchased and gift subscriptions, deposit, reformatting projects, or through the demand purchase service. CRL aims to collect at least one newspaper from each state in the United States and at least one from each country to provide a broad pool of titles for use in research. CRL also acquires specialized newspapers, such as those of the US ethnic press. Bibliographic access to these newspapers are provided by CRLCATALOG and the foreign newspapers page on CRL's Website. The demand purchase service for backfiles of US and foreign newspapers with current subscriptions alleviates expenditures from local material budgets.Additional costs savings may be achieved through the purchase proposal and shared purchase services. Members are relieved of the costs of providing local access to newspapers that have limited ongoing local demand.

The goals for the global newspapers component are to:

- Become the North American centre for foreign newspapers to reduce the need for members to collect and preserve foreign newspapers.
- Increase title and geographic coverage of newspapers and expand reformatting both to broaden access and preserve more titles.
- Develop a Website based electronic requesting and delivering service available to individual users worldwide.

Serials

CRL acquires serial titles rarely held by North American libraries through exchange agreements, purchased and gift subscriptions, and member deposit with a focus on foreign serials, especially Asian and Eastern European science and technology titles. Titles currently acquired are outside of the core of heavily used, high demand titles that are commonly collected and retained by individual institutions. The component maintains backfiles of titles that are more commonly held but have little use due to the age of the material. A single, collectively held backfile of little used material reduces the costs of shelving locally while increasing the collective use. Such backfiles provide a paper archive that backstops emerging electronic files of serials. Bibliographic access to these newspapers are provided by CRLCATALOG.

The goals for the serials component are to:

- Refocus and build the CRL collection of rarely-held titles along subject lines.
- Expand systematically CRL's role as a print on paper preservation archive backstopping emerging services like JSTOR.
- Establish special collections of serials or journals by pooling the resources of participating libraries.

Foreign Doctoral Dissertations

CRL provides comprehensive access to doctoral dissertations submitted to institutions outside the United States and Canada. Foreign doctoral dissertations are acquired by the Center through gifts, exchanges, the demand purchase service, and member deposit. A small number are acquired on serial subscriptions when published in a sub-series of a serial title to which CRL subscribes. CRL also purchases Russian dissertation abstracts in the humanities and social sciences from the Russian Academy of Sciences (INION). A single, commonly held collection of foreign doctoral dissertations reduces the costs of shelving locally while increasing the aggregated use. The demand purchase service for foreign doctoral dissertations reduces expenditures from local material budgets.

The goals for the foreign doctoral dissertations component are to:

- Establish a worldwide electronic requesting and delivery service for doctoral dissertations submitted to institutions outside the United States and Canada.
- Expand the number of institutions globally that deposit dissertations at CRL.
- Increase the use of dissertations through expanded bibliographic access.

Retrospective Collections

CRL acquires and maintains extensive collections of major microform or reprint sets of global archival materials; selected monographs; special collections such as U.S. imprint, primary and secondary level textbooks; college and university catalogues; and U.S. state documents. These collections are acquired through the purchase proposal, shared purchases, and archival demand purchase services; subscriptions; and member deposit. Access is provided to microform and reprint sets that are expensive to purchase and to large collections of material that are expensive to maintain locally. The demand purchase service for microfilmed archives of the activities of national governments reduces the need for expenditures from local material budgets. Additional costs savings may be achieved through the purchase proposal and shared purchase services.

The goals for the retrospective collections component are to:

- Expand the ability of CRL to accept collections on deposit to have a major impact on reducing the growing shelf space shortage within member libraries.
- Seek to coordinate collaborative efforts among significant North American repositories and storage libraries.

Area Studies

CRL administers and coordinates the activities of six area studies microform projects: Cooperative Africana Microform Project (CAMP), Latin American Microform Project (LAMP), Middle Eastern Microform Project (MEMP), Slavic and Eastern European Microform Project (SEEMP), South Asia Microform Project (SAMP), and Southeast Asia Microform Project (SEAM). Each project has its own governance, by-laws, and fees. Each project selects material to preserve and collect according to their own guidelines. These cooperative projects provide access to a pool of material that are beyond the means of any individual area studies programme to provide and that might not be available at all without preservation. The Center coordinates collective activities of the various area studies projects through the Area Studies Council (ASC). The ASC provides a forum for discussing shared concerns and reducing duplicative efforts.

The goals for the area studies component are to:

- Expand CRL's role as a coordinator and facilitator for the work of area librarians and international studies specialists.
- Increase the number of area studies projects.
- Play a role in solving the shortage of area librarians.
- Examine the role of subject approaches in area studies materials

The Economic Benefits of CRL Membership

Last year, CRL added nearly 80,000 new volumes at a unit cost of USD 13 compared to the average of USD 62 among the university library members of the Association of Research Libraries. For the average member, each volume cost 38 cents. Over the last decade, a typical member gained access to a million new volumes at an average of 23 cents each. In total, CRL membership enables each member to add to its collection nearly five million volumes at a unit cost of less than one penny each per year.

By sharing the costs with over 165 partners, each member leverages its resource-sharing dollars many times. Members need not acquire, process or store little-used scholarly journals, foreign newspapers or foreign dissertations. CRL's ability to take member deposits frees local space as well as shifts the burden of maintaining the collection to the entire group where the cost is widely spread. Demand procedures fulfill requests from scholars for specific purchases of foreign dissertations, archival materials and newspapers without creating fragmented collections at each member library.

Leveraging dollars is also made possible by the Center's active development programme. In the past dozen years, CRL has added to its budget USD 10 million, the equivalent of three years of membership fees, for both capital and project purposes. The CRL online public access catalogue, improved storage facilities, retrospective catalogue conversion and preservation microfilming have been accomplished in large part with funds from sources other than members' fees. The Center can attract such grants because a single grant can benefit a large number of institutions.

The Question of Electronic Resources

North American academic and research libraries, faced with rising demands from users, have found it necessary in recent years to reallocate within budgets that do not keep up with the increasing costs of library publications. They also face a dual problem in which they must continue to acquire and provide print resources while they are confronted increasingly with a growing array of electronic publications. Assumptions are sometimes made by legislators, trustees and others that the transition from publishing in print to publications available only electronically will happen over a short period of time. Further, some believe erroneously that just as quickly the conversion of all existing print collections into electronic format will occur. The reality is that traditional publications, whether solely in print or jointly with electronic forms, will be required well into the future for libraries to meet user needs. Similarly, the lack of funds will slow dramatically the conversion of existing printed collections just as it has for preserving endangered books. The problem of acquiring all that must be collected and making these items permanently available is the most serious challenge ever to face the community of research libraries.

CRL, with nearly 50 years of experience in preserving and archiving publications in print on paper and in microform, has begun in the 1990s to explore and learn about the processes and economics of converting print materials, storing and making them permanently available in electronic formats. A project recently funded at CRL by the Andrew W. Mellon Foundation is converting into bit-mapped images nearly one million pages of 19th and 20th century serial publications from the provincial and national governments of Brazil. Selecting, installing and maintaining a mass storage system as well as developing a World Wide Web access tool at CRL has provided invaluable insight into managing and operating an international service at the forefront of technology. These efforts direct collecting and service demands away from individual libraries to the shared cost environment of CRL.

A number of electronic journals projects are underway, including the JSTOR project, which is providing online access to a growing number of journal backfiles, but not current issues, and the Elsevier titles, which is offering online access to current issues and limited backfiles. Based on experience with information retrieval service providers offering current abstracts and indices online in the 1970s, the question arises about permanent availability. For retaining literature seen by the commercial sector as without substantial profit potential, the library community in the past has turned to CRL for these materials.

It is clear to CRL that the increasing numbers of electronic resources will impact the future of inter-institutional collaboration, including CRL's core programme of cooperative collection development. CRL envisions projects that will continue the effort to explore the principal options available to CRL in the context of electronic resources.

Having gained experience in converting print to electronic format, archiving it and making it available via the Internet, CRL will explore the acquisition, storage and delivery of materials that originate in electronic format. This brings into the discussion issues about current versus retrospective materials and pricing strategies apart from traditional membership fees as well as access from institutions beyond the existing membership. CRL will pursue a project involving electronic titles as a means of exploring the processes and economics surrounding lesser-used electronic journals.

CRL is seeking to partner with providers of electronic files of retrospective journals to strengthen the economics of their service by storing paper backfiles of the journals. The objective is to encourage libraries to discard local paper files, freeing scarce shelf space, and rely upon CRL for these titles as they have for other titles for decades.

Conclusion

The Center for Research Libraries as it nears its 50th anniversary remains a clear economic benefit to North American libraries today. CRL provides individual libraries ready access to a large array of scholarly materials at costs significantly below what they could achieve locally. How this successful model will be impacted by electronic resources is a matter of some speculation and of great interest.

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[1] Center for Research Libraries, Strategic Directions and Initiatives 1997-2001. Chicago: CRL, 1997.

[2] Ibid., p. 1-2.

Maxine Rochester and Pertti Vakkari

Maxine Rochester is Associate Professor in Library and Information Science in the School of Information Studies at Charles Sturt University - Riverina in Wagga Wagga, Australia. She is a member of the Section of Library Theory and Research and was a member of the Professional Board of IFLA from 1993 until 1995, representing the Division of Education and Research. Ms Rochester may be contacted at Charles Sturt University, School of Information Studies, Locked Bag 675, Wagga Wagga 2678, Australia (fax: +(61-2) 69332733; e-mail: mrochester@csv.edu.au)

Pertti Vakkari is Professor and Head of the Department of Information Studies. He may be contacted at the University of Tampere, Department of Information Studies, POB 607, FIN-33101 Tampere, Finland (fax: +(358) 32156560; e-mail: inf@uta.fi).

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International LIS Research: A Comparison of National Trends

Introduction

The study of national trends in library and information science (LIS) research started with articles by Järvelin and Vakkari[1,2] on trends in international LIS research. They described the trends in LIS research by comparing distribution of topics, approaches and methods in the years 1965, 1975 and 1985. The source material contained articles published in core journals of LIS. This study led to a research project that compared LIS research in Scandinavian countries[3,4,5].

The Section of Library Theory and Research of IFLA initiated a series of national studies based on the research by Järvelin and Vakkari. These were inspired by Cano and Rey's[6] presentation on trends in Spanish LIS research at the Section's meeting in Barcelona 1993. Their paper was based on the classification schemes by Järvelin and Vakkari. The Section for Library Theory and Research considered these classification schemes as tools validated by the study of Cano and Rey for comparing research in LIS in various countries, although they also raised justified criticism towards the schemes. At the meetings of our Section we have heard reports on LIS research from Turkey,[7] China,[8] and one from the UK in Copenhagen.[9] Small project funding from IFLA assisted a study for Australia by Rochester[10] and one just completed for Turkey by Yontar and Yalvac.[11] We will use these in our comparisons.

A small project grant to Rochester and Vakkari for 1997 allowed a comparison of international and national trends in LIS research; this article is a preliminary report. Our aim is to present a summary of findings from the studies mentioned above. We will compare the most popular topics, subtopics and methods in the national LIS studies and relate them to the international trends reflected in the study by Järvelin and Vakkari. The countries include Finland, Spain, Turkey, Australia, China and the UK.

It is interesting to analyze how the national characteristics of LIS differ from the international trends in LIS research. The comparison reveals the peaks and valleys of the national LIS landscapes, and their relation to the international trends. This analysis gives us a descriptive account of the situation. If we are interested in the differences in national features of research, we have to seek the explanation from the social and cultural differences of those countries. These factors have an impact on the formation of the national innovation system in a country. An innovation system includes systems for higher education and research. The characteristics of the innovation system for its part determines the formation of LIS research. Both economic and cultural features of a country affect LIS research through its innovation system.

Social and Cognitive Institutionalization of Research Fields

Richard Whitley's[12] differentiation between social and cognitive institutionalization of research fields gives us a tool for analyzing differences in LIS research between countries. The social aspects concern in particular differences in the structuring of education and research and the degree of organization within the scientific community. The cognitive aspects refer to how central concepts and theories within the discipline are defined, as well as to main research areas, basic problems, methods and relevant solutions. Whitley's basic idea is to examine the association between intellectual products and the way in which they are produced.

The basic difference between scientific structures is the degree of their institutionalization. Institutionalization refers to the patterning of actions and meanings. The degree of coherence and organization of actions and perceptions, and the extent to which ideas are articulated and adhered to constitute the degree of institutionalization. A field exhibits a high degree of institutionalization when the researchers share a common attitude in terms of its aims, methods, and explanation ideals. The more consensus there is about the central ways of conceptualizing the field, its basic problems and methods, relevant solutions and results, the more cognitively institutionalized it is.

Social institutionalization refers to the creation and maintenance of formal structures, which demarcate members of a cognitive structure. These arrangements function as a basis for the social identity and as an organizing principle for the activities. Social institutionalization is made up of two dimensions. On the one hand it refers to the degree of internal organization and boundary-definition, and on the other hand to the degree of integration in the social structures in terms of legitimization and resource allocation.[13] The first dimension includes the foundation of research associations and formal communication channels like scientific conferences and journals. The latter dimension refers to the degree of integration of the field into university departments and teaching curricula. University departments, chairs, teachers' and research posts, and doctoral programmes are the hallmarks of a mature social structure of a speciality. One could suppose that a cognitive structure implied by a high degree of social institutionalization of LIS differs from the cognitive structure produced by a lesser institutionalized social structure.

The compared studies do not include data about the social structures of LIS research due to the fact that the source article did not include this problem formulation. Thus, the differences in the research between the analyzed countries can be explained only by giving civilized guesses. However it is possible to illustrate how the social dimension of research shapes its cognitive output by using Scandinavian countries as a case. A comparative study of LIS research in Scandinavia has used Whitley's frame as its point of departure.[14,15] We will complete our analysis of trends in LIS research by this case, and one for Australia.

Construction of Library and Information Science and its Subfields: How to Squeeze Reality in a Mould

In order to be able to study the trends of LIS research one has to differentiate research from non-research, e.g., from professional writings, and to demarcate research in LIS from other research. After that a content analysis scheme for the subfields of LIS and other features of research can be developed.

Järvelin and Vakkari[16] excluded professional publications from the analysis. If the knowledge base consisted of other than research results and metatheoretical statements, we would be dealing with pseudoscience. Their definition of research, which was adopted from Peritz[17], was expressed in quite general terms: "Research is an inquiry, where the goal is to elicit, through a systematic method, some new facts, concepts or ideas." Today they would use some additional criteria: a sound frame of reference, exact problem formulation, and connection to earlier research. However, Järvelin and Vakkari still believe that this definiton was strict enough for helping to differentiate research in a quite unequivocal sense.

When constructing a classification scheme of LIS one has to have some kind of understanding about the scope of LIS and its major subfields. How should the discipline be demarcated from other fields? Which themes and problems belong to the domain of LIS, and which do not? What are its central subfields? There is no pre-existing entity that can be called LIS, in the same way we are able to name familiar objects like an orange, and divide it into segments. Thus, the solutions, and definition of the domain is always to some extent normative. It is a construction guided by some metatheoretical presuppositions and directives.

In the first article Järvelin and Vakkari defined LIS ostensively by referring to the core journals of LIS. What is published in these journals indicates the domain of LIS. In connection with the Scandinavian study[18,19] a definition was developed: "We conceive of LIS as a discipline that views information processes from an information seeking perspective. This does not mean that the research exclusively focuses on information seeking, but this perspective essentially structures the discipline. The objective of the investigation is the information seeking of individuals and groups, the factors that generate this activity, as well as various arrangements and conditions that support the information seeking and provide access to information (e.g., LIS units)."

A ground plan for the topics of LIS was outlined from this perspective. However, the definition did not contain clearcut and detailed building bricks for constructing the branches of LIS. The original classification scheme was designed partly on the basis of the contents of the articles forming the data, and partly on the basis of relevant earlier classifications and the theoretical knowledge by the authors. Although the final version was a result of the interaction of the data and the theoretical understanding of the discipline, the most crucial was the latter one. One would claim that it is impossible to create a theoretical construct solely on the bases of the data. Single units of the data as such would not tell one what kind of classes one should form. In order to be able to infer classes from the data, to conceptualize it, one has to have some theoretical ideas in mind. All our observations are theory laden. It depends on our way of seeing, on our frame, whether the bottle is half empty or half full.

The classification scheme for topics of LIS by Järvelin and Vakkari[20] was a construction of LIS and its subfields (Appendix 1). It reflects the understanding of the field as it was in the middle of the 1980s. One can consider how well this drawing of the map resembles the landscape of LIS about ten years later. At the time of its creation the topic scheme of LIS was the most comprehensive and systematic attempt to divide our field of research into subfields. That it has been used for further studies is an indication of that. It left, however, room for improvements. It was criticized - justifiably - by some colleagues. Cano & Rey[21] suggested that it should include more elements of library and information systems input and also take into account the social dimension in more detail. Despite criticism, no one has presented a more valid version of it. An old truth is that it is always more difficult to be a system builder than its critic.

Also the classification of research methods (Appendix 2) by Järvelin and Vakkari is open to critical remarks. Some classes are not always so easy to differentiate from each other. The problem is the lack of the necessary detailed operational definitions of classes which would help sort the problematic cases into the right position in the scheme. The same problem holds for some cases in the scheme for the topics. Cultural differences especially might affect the understanding of the content of similar expressions. Although a common noun is used, persons from different backgrounds might refer to a different set of entities, e.g., interpretations of some classes both in the topic and method schemes are different in the Chinese study of LIS research.[22]

Although the scheme provided a sound base for the analysis of national LIS research output, it is evident that it reflects the cognitive tradition of LIS in the western industrialized world. It might be more difficult to apply it to the research output of other countries.

Data from the Participating Countries

A summary of the data from the studies is presented in Table 1. The time periods of the studies vary to some extent. International trends are from the years 1965, 1975 and 1985. The data from the UK is from the years 1965, 1975, 1985 and 1995. The Turkish data is a cumulation of ten year intervals: 1952-1964, 1965-74, 1975-1984, and 1985-94. The rest of the studies include data from a shorter time period. Spain includes a cumulation from the 10-year period 198?-199?, and Australia also a ten year cumulation for the period 1985-1994. Data from Finland is also cumulations of three periods, 1965-74, 1975-84, and 1985-89. The Chinese results are based on data from the years 1985 and 1995. The time periodization of the national data sets is comparable. Also the international data representing the trends with intervals of ten years is comparable with the national data.

TABLE 1 A SUMMARY OF THE DATA FROM THE ANALYZED STUDIES

Study	Area	Time period	Sources	# of documents
Järvelin & Vakkari 1993	International	1965 - 85	39 core journals	142; 359; 449
Vakkari et al. 1993	Nordic countries	1965 - 89	All monogr.. & articles	D=429; F=403; N=228; S=668
Cano & Rey 1993	Spain	198? - 9?	2 journals	354
Yontar & Yarva c 1996	Turkey	1952 - 94	1 journal	127
Rochester 1995	Australia	1985 - 94	2 journals	126
Cheng 1996	China	1979 - 94	23 journals	1930; 2447; 2665
Layzell Ward 1997	UK	1965 - 95	9 journals	44; 79; 95; 153

How well the data represents the research output of LIS in the studied countries depends upon the selection of the sources whence it has been acquired. The Finnish data included all the research publications, both articles and monographs. The data from the other countries consisted of articles from the core research journals of the field. However, there are not pure research journals in all the studied countries. Thus some of the journals were professional ones that also included research articles. It is difficult to assess how well the selected journals represent the total research output of each country. However it is plausible to suppose that the core journals are publishing the most important research results and thus reflect the main trends of research in the countries involved. Still one can doubt that the publication patterns in the subdomains of LIS differ so that e.g., humanistically oriented scholars publish their results in the form of monographs rather than as journal articles. One can claim, however, that humanists also publish articles in general and when preparing a monograph in particular. Thus the data is representative also in this respect.

Topics for Research

When we consider the findings of the three most popular topics for research from an analysis of the international and the national studies of LIS research, as given in Table 2, we find some broad similarities. The classification of topics devised by Jarvelin and Vakkari is given in Appendix 1. The cautions already expressed about the application of the classification schemes should be kept in mind.

TABLE 2 THREE MOST POPULAR TOPICS

Study	Time Period 1965	1975	1985	1995
International	IS&R 32 L&I Services 25 Info Seeking 8	IS&R 26 L&I Services 25 Other LIS Topics 15	IS&R 29 L&I Services 27 Other LIS Topics 10	
Australia				L&I Services 40[a] Info Seeking 20 History 14
China			Principles LIS 26 L&I Services 25 Related Disciplines 19	Principles LIS 28 L&I Services 20 Info Industry 15
Finland		Services 36 Info Seeking 32	Info Seeking 25 L&I Services 21 IS&R 20	IS&R 28[b] Services 19 Info Seeking 11
Spain				IS&R 19[c] Services 19 Sci. Comm. 19
Turkey	Library History 43[d] L&I Services 43 IS&R 14	IS&R 50 L&I Services 43	L&I Services 60 IS&R 9 History 9	L&I Services 59 IS&R 11 Info Seeking 10
UK	L&I Services 27 Info Seeking 25 IS&R 23	L&I Services 49 IS&R 25 Sci Comm 10	L&I Services 34 IS&R 22 Info Seeking 22	L&I Services 41 IS&R 22 Info Seeking 16

a Period 1985-94
b Period 1985-89
c Period 10 years
d Period 1952-64

In the international journal literature information storage and retrieval was the most popular topic and library and information services the second most popular for the years 1965, 1975 and 1985. The analysis of the UK literature revealed that library and information services were the most popular topic in each of the years 1965, 1975, 1985 and 1995. Information storage and retrieval was the third most popular UK topic in 1965, and second most popular in the years 1975, 1985 and 1995. Also information seeking, the third most popular topic internationally at 8% in 1965 was the second most popular at 25% for the UK. Information seeking was still popular in the UK in 1985 at 22% and in 1995 at 16%. Thus the UK and the international journal literature showed similarities for topics to be investigated over an extended period of time.

For Turkey library and information services were investigated by 43% of the researchers in the early period, the same percentage in the period 1965 to 1974 and 60% in the period 1976 to 1984 and still 59% in the period 1985 to 1994. As for the international articles and the UK, information storage and retrieval was popular for Turkish researchers: 14% in the period to 1964, 50% in the next 10-year period, 9% and 11% in the next ten year periods to 1994. Library history accounted for 43% of the research topic articles in the early period, but did not feature again as a popular topic. For Finland we also find library and information services a popular choice: 36% researched it in 1975, 21% in 1985 and 19% for the period 1985-1989. Information storage and retrieval was also popular: 20% in the period to 1985 and 28%, the most popular, in 1985-1989. Information seeking also featured for Finnish researchers: 32% in 1975, 25% in 1985 and 11% in the final period. Other topics were investigated by 11% in 1975 for Finland.

In the Chinese literature library and information services were the second most popular topic in the two periods: 25% in 1985 and 20% in 1995. Other popular topics were unique to China: principles of library and information science at 26% in 1985 and 28% in 1995; and related disciplines at 19% in 1985 and the information industry at 15% in 1995. For the Australian and Spanish library literature only a recent ten year period was analyzed. Library and information services was the most popular in Australia at 40%, and popular in Spain at 19%. In Spain information storage and retrieval also attracted 19% of researchers. Scientific communication, also at 19%, was unique for Spain, and library history at 14% for Australia was third most popular, as it had been for Turkey in the early period.

It seems that strong interest in LIS services has been typical of the research in Australia, Turkey and the UK. The literature in these countries contains relatively more publications on this topic than the international journals.

TABLE 3 THREE MOST POPULAR SUBTOPICS

Study	Time Period 1965	1975	1985	1995
International	Class & Index 22 Automation 8 Collections 6	Class & Index 14 IR 8 Administration 6	IR 13 Collections 7 Admin 6	
Australia				Library Use 10[a] Admin 9 Collection study 7
China			Principles LIS 16 Class & Index 8 Bibliography 7	Principles LIS 15 Info Industry 9 Class & Index 8
Finland			History 10[b] IR 9 Info seeking behav 7	
Turkey	History 43[c] N=too small for other subtopics	Class & Index 29 Admin 29 Cataloguing 14	Admin 26 Several Activ 11 CollectionsUse/users 6 Catalog Circulation 6	Admin 31 Automation 10 Several activ 8 Use/users of info 8

a Period 1985-94
b Period 1965-89
c Period 1952-64

Information seeking has been a more popular topic in Australia, Finland and the UK than in the international literature. The internationally most popular topic, information storage and retrieval, has been a well researched area only in Finland and the UK. LIS research in these two countries seems to reflect international trends more closely than research in the other participating countries.

We should also consider the most popular subtopics investigated (Table 3). The data is more sparse here and there seem to have been difficulties in applying the classification scheme. The popular subtopics for the topic information storage and retrieval were classification and indexing, information retrieval and cataloguing. The most popular subtopic in the international literature was classification and indexing: 22% in 1965 and 14% in 1975. It was most popular also in Turkey in the period to 1975. In China it attracted 8% in 1985 and in 1995. Cataloguing attracted 14% in Turkey to the period 1975. Information retrieval was the subtopic for 8% of international articles in 1975, and 13% in 1985. For Finland information retrieval attracted 9% of research authors.

For the popular topic of library and information service activities we find the subtopics collections, administration and automation popular in the international articles. Administration and collections were also popular in Australia. Circulation, collections, administration, automation and several interconnected activities were also examined by researchers in Turkey.

The topic of information seeking had some popular subtopics: use of library and information services attracted 10% in Australia, information seeking behavior attracted 7% in Finland and use/users of information attracted 6% in Turkey in the period to 1984 and 8% in the last period.

Research Methods

When we consider the three most popular research methods used we again find some methods are universally popular (Table 4). In the international literature the conceptual research method remained the most popular over time: 29% in 1965 and 1975, 23% in 1985. Also the survey method was often used: by 23% in 1965, 20% in 1975 and 23% in 1985. Historical method was used by 11% in 1965, and replaced in popularity by system design in 1975 and 1985, at 15%.

TABLE 4 THREE MOST POPULAR RESEARCH METHODS

Study	Time Period 1965		1975		1985		1995	
International	Conceptual	29	Conceptual	29	Conceptual	23		
	Survey	23	Survey	20	Survey	23		
	Historical	11	System design	15	System design	15		
Australia							Survey	44a
							Historical	14
							Discussion	10
China					Historical	25	Historical	18
					Conceptual	16	Mathematical	12
					Mathematical	13	Conceptual	11
Finland			Survey	57	Survey	32	Concept	21b
			Historical	11	Concept	22	Historical	20
			Concept	7	Historical	13	Survey	13
Turkey	Conceptual	29c	Literature review	5	Literature review	37	Literature review	47
	Historical	29	Conceptual	21	Survey	31	Conceptual	21
	Survey	29	Survey	14	Historical	17	Survey	17
UK	Discussion paper	73	Discussion paper	34	Survey	20	Survey	29
	Survey	16	Survey	19	Conceptual	22	Conceptual	22
	Literature review	7	Literature review	10	Literature review	13	Case or action	7
							Literature review	7

a Period 1985-94
b Period 1985-89
c Period 1952-64

Findings for articles over three periods are available also for the UK literature. Here there were changes: the discussion method was very popular with 73% of research article authors in 1965, fell to 34% in 1975, and no longer featured as a popular method in 1985 and 1995. The survey was the second most popular in the first two periods, and in 1985 and 1995 was most popular at 20% and 29% respectively. The literature review featured as third most popular in the four test years. The conceptual method featured as the second most popular method in 1985 and 1995. Case or action research appeared as equal third most popular in 1995. Survey and conceptual methods were the only ones also popular in the international literature. For Turkey in the early period the conceptual method was also popular at 29%, as also was historical method: 29% in the early period and 17% in 1975-84. The survey method was also frequently used in each of the four time periods examined. The literature review took over as the most popular method for the three periods after 1965: 57%, 37% and 47% respectively.

For Finland for the three time periods we find the same three methods used as in the international studies: survey, historical and conceptual, but in different orders of frequency of use. Historical was the method most used in China for both periods examined, 25% and 18% respectively. Also conceptual and historical method appeared in both time periods. For Australia the survey was used by 44%, with historical and discussion method used by 14% and 10% respectively. For Spain we do not have detailed data, but empirical research strategies were employed in 33% of articles, conceptual/mathematical in 7% and descriptive and discursive methods in 36%.

Thus overall we see the survey method was popular internationally and nationally, as was the historical method and the conceptual. We need to ponder these findings and think about the popularity and changes in popularity of various research methods over time. We should also ask why some research methods, such as experimental or qualitative, widely used in other discipline areas, are so little used in LIS.

The Scandinavian Case

In the following we examine the connection between social institutionalization and cognitive development of LIS in Scandinavia during the period 1965-1989. The case is based on the article by Vakkari.[23] First we analyze the development of the social structures within LIS and the research conditions that have been created in these countries. Then we examine the cognitive development of the research in relation to the social structures.

Social Structures

Library and information science was and is integrated in the Nordic institutions of higher learning in various ways. One extreme is the situation in Finland, where LIS has been a part of the university structure since 1971. Elsewhere LIS has been linked to various separate professional colleges, although changes have been seen, starting in the late 1980s, especially in Sweden. In Finland, the discipline has established itself as a part of the traditional university structure. Separate disciplinary departments with professors and research positions of their own have been established. This has guaranteed a continuity of the research. The establishment of doctoral programs has also strengthened continuity. It offers opportunities to educate researchers who concentrate on LIS.

In the other Scandinavian countries LIS has been placed in separate professional schools. During 1965-89 the schools in Denmark, Norway, and Sweden did not have any professorships nor any research positions. Neither did they have any doctoral programs.

The social institutionalization was during the period of investigation most developed in Finland. In spite of scarce resources social institutionalization in Finland meets all the conditions that Whitley's[24] definition of a high degree of social institutionalization requires: a department, a professor, research positions, and programmes of research training as well as a scientific association and a scientific journal that function as the basis for communication.

Up until 1989 no funds had been allocated for a professor level position in LIS in Sweden, but a few occasional research positions in connection with other disciplinary departments had been financed. There were no doctoral programmes, and the researchers had to get their research training in other disciplinary programmes. However, research opportunities increased with financing that was targeted exclusively to LIS. In Sweden, a scientific journal in the field is being published. In Denmark, the social organization of the research is limited to funding that the Royal School of Librarianship has allocated for research, the publishing of a journal and the library history year-book. Research positions or research training did not exist. Norway lacked most of the social structures of LIS. At the library school in Oslo there is a body called BRODD (School's consultancy and applied research unit). It can be viewed as a social structure that integrates the professional goals of the research and the profession.

Because of the low degree of social institutionalization in Denmark, Norway, and Sweden, the researchers in these countries had limited structural opportunities to associate with the social organization of LIS. The preconditions, everything from research training to communication channels, were inadequate. This is why the profession offers for researchers a noteworthy alternative for the creation of an identity. The low interest in the field's research themes on the part of other disciplines contributes to marginalizing those with research training and strengthens their connection with the profession. Other disciplines don't succeed in offering attractive enough social structures. In Sweden, however, there were a few academic departments that have been able to attract library researchers. They offered a research environment with opportunities for communication and identification.

When the degree of social institutionalization is low, a strong professional organization with significant financial resources can regulate the cognitive direction of the research by favoring certain subject areas and problems. A good example is Folkebibliotekens Rådighetssumma (Public Libraries' Financial Research Aid) in Denmark, which led to Danish library research being directed toward public library problems. Another example is the problems concerning automated library systems, which in Norway and Sweden in the 1970s and 1980s led to a concentration on library research in these areas.

Social Institutionalization, Definition of LIS and other Cognitive Features of Research

The degree of social institutionalization affects the way the discipline and the cognitive features of research are seen. In Denmark, Norway and Sweden the social structure of LIS was undeveloped. When the structural opportunities for research are almost completely lacking, the profession offers the only obvious road for creating them. The researchers had usually a professional background, thus, it was only natural to identify themselves with the ideals of the profession. The implication of this identification was the sharing of the ideals concerning the nature of the discipline and research. The discipline was linked to the problems of library and information service organizations. The internal distinctions within the profession were generalized to apply to the discipline as a whole. The functional differences were projected onto science as well. This has not been an uncommon feature in discussion about the nature of LIS outside Scandinavia.[25-27] The strong links with the professional structure caused also a stronger emphasis on applied research. The weak social institutionalization of LIS implied in research output a more system-oriented understanding of LIS, concentration on library-related problems, and seeking for solutions with have immediate applicational value. These features were reflected by the choice of library organizations, and topics which are related to them, as a research object in studies more often in these countries than in Finland.

In Finland, the integration of LIS within the university organization meant that the researchers started to identify with the norms of the research community. This was the only way to obtain legitimization of the discipline within that community. At the same time it caused a distancing from the norms of the profession.

The primary goal for the academics is to educate competent researchers and do good research. The primary contribution is the internal development of the discipline, the creation of new theories and concepts, and the improvement of methodology. The practical applications that are of importance to the profession are of secondary importance to the discipline.[28-30] Basic research therefore has become a priority.

The integration of the discipline into a university community meant that the character and the definitions of the dicipline had to be problematized. The research community disassociated itself from a definition based on the library organizations and replaced it with a view that is based on a broader theoretical foundation.The idea of facilitating access to information was the integrator of the dicipline. This also affected the choice of research themes and problem formulations in other areas than the library-oriented problems. The library organizations were viewed as special cases.

It looks as if the social organization of LIS in the Scandinavian countries was associated with what kind of research was being pursued. The researchers' identification with either the research or the professional community functions as a mediating factor. Strong social institutionalization creates identification with the norms of the research community, which leads to an appreciation of basic research and theoretically broader problem formulations. Weak social institutionalization leads to a professional orientation, which is followed by a compliance with the research ideals of the professional community. It appears that the differences in identification in general leads to diverging views on the research object of LIS. The research community rewards non-system-oriented studies, where the LIS organizations are viewed as a component in the information gathering process. Professionally oriented research concentrates on library organizations. The consequence is a difference in the cognitive structures within LIS. The research community also considers themes, perspectives, problems and solutions other than those that focus on the LIS organizations as important for research, while professionally oriented research focuses on themes that are important for the LIS organizations.

The results suggest that the degree of social and cognitive institutionalization is not clearly linearly dependent in the Scandinavian countries. However, the general direction is that a well developed social structure implies a non-system-oriented cognitive structure. The Finnish research exhibited more of these features than the others. In Norway, where the social institutionalization was the weakest, the research most clearly exhibited a professional cognitive orientation. When the cognitive features were concerned, Denmark and Sweden were often placed between Norway and Finland. The differences were not always systematic, but often supported the hypothesis.

The Australian Case

A preliminary analysis of the social structures and cognitive development of LIS in Australia during the period from the mid-1980s to the mid-1990s follows.

Social Structures

In the mid 1980s in Australia there existed only two library schools in universities; they both had professors of librarianship. Other library schools were in higher education institutions known as colleges of advanced education or institutes of technology. These institutions emphasized teaching rather than research, but some began to offer research Masters degrees in the 1980s. In the late 1980s there was a major reorganization of higher education in Australia, with mergers and upgrades of these college institutions to university status. Material on social structures is based on a book by Rochester.[31]

All 11 library schools/departments are now located in universities, which are enhancing their research cultures. Faculty are beginning to identify with the research community. Those teachers without doctoral qualifications are mostly acquiring them. There are now five full professors in the LIS area in Australia but few research positions. The discipline areas represented among the schools/departments are traditional LIS, teacher librarianship, archives and records management. As Australia has a population of only 18 million people and there are 11 schools/departments, there are some small departments. The number of schools can be partly attributed to the immense distances between cities in Australia. Courses are three-year general librarianship and four-year teacher/librarianship undergraduate programmes, and one-year graduate diploma and longer taught Masters programmes. Several courses are available in distance education mode. Also available are research Masters and doctoral programmes and the number of students taking research degrees is increasing. However as most students study part time progress is slow. The schools/departments are associated with larger academic groupings: computing, business and communications are favored, and one is associated with an education school. Now Australian LIS is beginning to meet the conditions that Whitley[32] laid down for a high degree of social institutionalization.

Cognitive Features

Because of the social situation of education for librarianship in Australia, research has mainly been of an applied nature. As shown in the content analysis of the articles in the two main Australian librarianship journals for the period 1985 to 1994[33] only 24% of articles could be classified as research ones, with most research being professionally oriented. Of these research articles 40% were concerned with research on library and information service activities, 20% with information seeking and 14% with library history. The main research strategies used were the survey method by 44% of the researchers and historical method by 14%.

The characteristics of the authors of the research articles for the 10 year period of the journals were then examined[34] to see whether they wrote alone, or collaborated with others, etc. There were 76% single authored papers; it was concluded that "most LIS researchers in Australia seem to be working in lonely isolation." There are few large research grants available, so there are few research collaborations. The research methods used are those that can be employed in non funded research.

Conclusions

The comparison has shown a remarkable variation of emphases and trends in research in the countries examined. Each has its own research profile, which does not follow very closely the international trends. Despite the differences there are similarities. A strong interest in LIS services was typical of the research in Australia, Turkey and the UK. Research trends in Finland and the UK reflected most closely the research profile in international core journals.

We can seek explanation for national differencies in the cultural differences of these countries. However, we were able to show only for the Scandinavian and Australian cases how the social institutionalization of LIS has an effect on research output. A developed social structure of the discipline has a positive impact on the quality and quantity of research output.

Appendix I: The Classification Scheme

LIS topic
- Professions
- Library history
- Publishing and book history
- Education in LIS
- Methodology
- Analysis of LIS
- *Research on L&I service activities*
- Study on Circulation or interlibrary loans
  - Collections
  - Inf. or ref. service
  - User education
  - Buildings or facilities
  - Administration of planning
  - Automation (except when concerned with some particular activity)
  - Other L&I service activities
  - Several interconnected L&I activities
- *Research in IS&R*
- Study on Cataloguing
  - Classification and indexing (process or languages)
  - Information retrieval
  - Bibliographic databases or bibliographies
  - Nonbibliographic data bases (textual, numeric...)
- *Research on information seeking*
- Study on Information dissemination
  - The use/users of information channels/sources
  - The use of L&I services (no other channels

considered)
Information seeking behavior (focus on persons)
Information use (whether (and how) used)
Information management
Research on scientific and professional communication
Study on Scientific or professional publishing
Citation patterns and structures
Other aspects of communication
Other LIS Topic
Other study (other discipline)

Appendix 2: Methods - Research Strategy

Empirical research strategy
Historical method
Survey method
Qualitative method
Evaluation method
Case or action research method
Content or protocol analysis
Citation analysis
Other bibliometric method
Secondary analysis
Experiment
Other empirical method
Conceptual research strategy
Verbal argumentation, criticism
Concept analysis
Mathematical or logical method
System/software analysis/design
Literature review
Discussion paper
Bibliographic method
Other method
Not applicable, no method

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Patricia Layzell Ward

Patricia Layzell Ward is Editor of Library Manager and Secretary/Treasurer of the Section on Management and Marketing. She is involved with research, teaching and consultancy in the field of management. She can be contacted at Haulfryn, Cae Eithin, Minffordd, Penrhyndeudraeth, Gwynedd, Wales LL48 6EL, United Kingdom (e-mail: layzellward@celtic.co.uk).

Review of the Management Literature 1997

Introduction

This article continues the reviews of the general literature of management prepared by members of the IFLA Section on Management and Marketing, the previous one being that by Herrera and Pereyra covering 1996[1]. The literature is extensive and the Section is aware that the coverage to date has been limited to that published in the English language. In their paper Herrera and Pereyra question whether the time has come to narrow the scope of the reviews, and to this should be added the possibility of extending the coverage to the main languages of IFLA. Now that the Section has been transformed from a Round Table and has a growing membership list (has your organization joined yet?) it has the capability to undertake this task. The matter will be discussed by the new Standing Committee at its meetings in Amsterdam. The view of readers will be welcome and should be sent to the author.

The intention of the review is to draw attention to relevant papers in the literature of management - to save the time of the busy information and library manager. The articles selected met the following criteria: published in 1997, reflect the issues in the professional press, indicate changing approaches in the general field of management, and stimulate the thoughts of the reader. They were selected by a search of a commercial database covering 83 journal titles in the field of management in the English language. Trawling the abstracts revealed some 180 papers of particular interest from which the final selection was made.

General Issues

Perhaps the greatest influence on organizations today is the impact of technological change and a starting point is a paper by Cornish which reviews 34 predictions made by The Futurist in its first issue 30 years ago. Correct forecasts include the landing on the moon and the transplant of human body organs, but the prediction of the introduction of three-dimensional TV was wrong. He questions why some of the forecasts were not correct[2]. Eder discusses the benefits and the downside of today's interactive society, with the downside including the blurring of work and leisure, demands on time and resources, and connection yet isolation[3]. Speculating about the digitized future Cetron and Davies see the coming together of what used to be separate technologies giving examples of toasters which will "know" just how we like our muffins or toast done, and new kinds of computers such as DNA, Quantum or Optical which will need advances in software[4].

Turning to overall issues McCune describes the current operating climate as being characterized by a reversal of a command-and-control style, the competing needs of employees and customers, and the downsizing survivor's syndrome. He writes of the span of control embracing a number of teams, managers' multi-tasking, the use of project management, and the demands of regulations. The skills of delegation and flexibility are considered at a time of uncertainty which implies a need for greater control not less. The manager has to learn new supervisory skills[5]. The value of managing information effectively is prominent in the thoughts of leading management thinkers. Among a number of other points Drucker discusses the importance of external information gathering by organizations and the management of knowledge resources. Dyson considers what the Internet means in terms of a loss of organizational control of the corporate image. Handy calls for a new language of polity which stresses the need for the organization to be seen as a community created by a common purpose. Saffo sees the need for better management of information via tools such as visualization and simulation. Senge echoes McCune's view of the change of the command-and-control style but places the emphasis on learning and information sharing[6]. The forces of change are seen to be the global markets, teams operating in flatter structures, the burnout of personnel, and a lack of attention to building core competencies[7]. Kim and Mauborgne believe that people are less concerned with outcomes which have predominated management thinking to date, than with fair processes. Fair process is highly relevant in a knowledge-based economy in order to build trust and unlock ideas[8]. Whilst Japanese management practices have been much copied by the West in the past, Sawayama writes about the Japanese companies that have survived the recession. Five factors are identified for their success: a combination of operational measures with structural changes; awareness of strengths, weaknesses and capabilities; unexpectedly for Japan - human resource management policies such as meritocracy; powerful leadership at the top; and a competitive edge. The paper discusses the relationship between culture, performance and strategic focus[9]. Emery considers the future of the social sciences over the next 30 years. He indicates that this period will be characterized by people's attempts to create social orders, and institutions that are adapting to turbulent environments and controlling the complexity that results. He questions whether this will result in organizations that are more democratic - or totalitarian[10]. The role of social anthropology is seen as helping managers to understand the nature of their work, particularly in terms of corporate culture, critique and organizational change[11]. Brown discusses whether there is a distinctive multidisciplinary approach to management research, whether a specific approach can be chosen and applied, the essence of an academic discipline and the nature of management education, this having given rise to the debate as to whether management is an art or science. He believes that management research and practice are both becoming integrating activities[12].

Management innovations in government brought about by a reduction in the amount of public money devoted to government operations have been described by Kaul. They include a focus on achieving results, meeting customer expectations, distinguishing between policy formulation (political responsibility) and implementation (managerial responsibility), cultivating the commitment of staff to change, links between the private and public sectors, introducing output-oriented management systems and making full use of IT[13]. A series of papers discusses government reform in Australia[14], Canada[15,16,17], Ghana[18], New Zealand[19], Singapore[20] , and Zambia[21].

Knowledge Management

Knowledge management is a buzz-word in 1997. Quintas, Lefrere and Jones discuss whether it is just another management fad, but conclude that it is a process for the development of action-oriented goals and related activities[22]. A new term is "knowledge activist", defined as being the person or department which become responsible for coordinating knowledge creation efforts within an organization. Their roles are: to be catalysts for knowledge creating, connectors of knowledge creation activities (pulling together fragmented processes) and merchants of foresight (giving overall direction to the knowledge creation occurring in organizations' micro-communities)[23]. Jordan and Jones provide a framework for assessing an organisation's approach to knowledge management[24]. Demarest provides some definitions of knowledge management and stresses the need for it to enhance performance through innovation[25]. The reason why it is becoming more important is explained by Covin and Stivers who argue that in seeking competitive advantage, skills and talent may be more important indicators of long-term competitive prospects than tangible assets[26].

Strategic Planning

Strategic planning continues to be a dominant theme. Taylor reviews the changes that have taken place in strategic planning during the past 30 years moving from long-range planning to the grassroots approach[27]. Camillus examines the evolution of models to consider innovative alternatives for more flexible organizations, and constructs a transformational model that represents a paradigm shift[28]. The question of discontinuity is also reviewed by Leavy who wonders whether strategic renewal has to be a "disruptive revolution" or can be managed less traumatically. His paper includes a useful review of the literature[29]. A glossary of techniques for strategic analysis has been prepared by Hussey[30] who also reviews experience over the past 30 years, pointing out that organizations noted for the quality of their planning have later encountered problems. His four factors which can indicate a lack of quality are: a failure to analyze effectively; a failure to implement strategic decisions; problems in the planning process; and an incomplete understanding of the concepts[31, 32].

The concepts that underpin organizational learning and the problems of translating theory into practice are considered by Karagozoglu. A framework has been developed, and the relationship between assimilating knowledge and using it, is discussed[33]. On the other hand Kleiner and Roth argue that learning from experience is an individual phenomenon and so can frustrate the collective nature of organizational learning[34].

Thornberry makes an interesting point about "vision" in that it can be vague and that the literature has not been helpful in differentiating concepts. The elements which combine to give a clear vision are: the reasons for being; cultural beliefs and values; mission; goals and objectives; and a vivid description of what the organization aspires to. Visionary thinking can be taught - save for conceptual ability and courage[35]. Hawkins has surveyed the literature on organizational change, and argues that organizational culture is too complex to be explained by simple taxonomies and models and that a range of disciplines can contribute to research[36]. The paradox of new managers as levers of change is discussed by Rieple who feels that managers from the outside are more able to introduce change, but have less power and competencies as a result of relative inexperience of the organization. At the same time they need to mould themselves into an homogeneous unit, but this can conflict with the need for change. They also have to be fairly ruthless and hence risk demotivating staff and instilling fear[37]. The values that have guided Organization Development and the way in which they have been affected by techniques such as re-engineering are discussed by Burke. He considers that OD consultants should focus on the lack of community in society and organizations, trust, organizational cultures and corporate power[38]. Stainer and Stainer consider the ethical dimensions of re-engineering pointing out the suspicions that staff have of this process. They argue that it should be based on trust, commitment, improved processes and involvement[39]. The effectiveness of downsizing is reviewed by Orpen who argues that insufficient attention is being paid to alternatives, pointing out that the anticipated benefits may not emerge. Guidelines for effective downsizing include reducing layers, not just positions; providing employee support and assistance; and adopting a systematic approach[40]. The question of personal conflict emerges in a paper by Leonard and Straus who discuss the importance of understanding how people think and act. They describe diagnostic tools which help to gain insights which help to understand one's own cognitive style and preference through to depersonalizing conflict[41]. Brown examines Corporate Darwinism - the survival of the fittest, focusing on the debate concerning organizational structures and the advantages and disadvantages of flat and hierarchical structures. He believes that delayering has gone too far, and that it fails to understand the importance of middle managers and the value of some forms of limited hierarchy[42]. The advantages of the old hierarchical systems in terms of clear job descriptions are described by Sparrow. He lists the areas in which flexibility is being introduced: numerical, functional, financial, temporal, geographical, organizational, and cognitive, together with problems that result from job-based flexibility[43]. The psychological effects of downsizing and re-engineering upon people are described by Kets de Vries and Balazs, who write of the "mourning" period and burnout and the ways in which internal communications and HRM can minimize the damage[44]. The role of internal communication in assisting and improving the process of internal change and re-engineering, is stressed by Nelson and Coxhead. They write of the value of using a common language, positive and consistent behaviors, a top-level commitment, the raising of individual self-esteem, and the use of specialist communicators[45].

Leadership

On the agenda of most national library associations is the question of leadership development, but the review of the literature indicates that there may not be common ground amongst writers on this subject. Barker questions how we can train leaders if we don't know what leadership is? He argues that few writers have analyzed what they mean by leadership. His analysis is that it is grounded in the feudal concept of leadership in which a powerful male leader controls and directs the efforts of those at lower levels to achieve his goals[46]. Frank and Porter have examined texts on leadership but feel that it is not clear on how leadership can be effected. They consider that in practice it can be based on the following points that remove the need for elegant theories: what to do, how to do it, why to do it, resources to do it, want to do it, and commitment from the top[47]. The experience of working with managers around the world, by Heifetz and Laurie, yields six principles of adaptive leadership: get on the balcony - see or create the contexts for change; identify the adaptive challenge; regulate distress from adaptive work; maintain disciplined attention, give the work back to the people to get them to assume greater responsibility; and protect the voices of leadership from below[48]. Stewart addresses the question of managerial power and wonders if a more casual approach has really replaced the desire for power. He draws on three forms of power described by Weber - charismatic, traditional and bureaucratic - indicating that most of today's power falls into the last category. New styles of authority are being displayed with knowledge work and the market, challenging formal authority. He has studied the laid-back culture of the US West Coast: the digital revolution and the baby-boomer culture have contributed to a more relaxed style, but considers that power can still be perceived because of informal sources such as autonomy and visibility[49]. Research in Australia has investigated the reasons why women find leadership difficult, drawing on the experiences of women in leadership positions. The conclusion among the group was that women are leaders in the home and the community, but are excluded from leadership in the organization. It examines how women fight against this construct of leadership to develop their own sense of what leadership is[50]. Western leadership theory has been compared with that in West and East Asia and Africa. Blunt and Jones conclude that the current Western ideas of leadership are not widely applicable in Asia and Africa because of different values concerning authority, group loyalties and interpersonal harmony[51]. Moral leadership is discussed by Gini who examines the traits and talents required by the leader such as character, charisma, political ambition, and technical expertise or business literacy. Moral leaders must inspire achievement and take risks[52].

Teams and Teamworking

Deligonul has developed a framework for understanding team research which is based on the philosophical perspectives of: operationalism; modernism; post-operationalism; and post-modernism. Each is described before positioning team research along the dimensions of the framework. The conceptual and managerial implications for future research and for the implementation of teamwork are discussed[53]. The defensive actions, procedures and processes used by team members to shield themselves, or the team, from threatening and embarrassing situations are described[54]. Belbin's team role theories have been examined to evaluate their ability to predict team performance. The findings indicate that it is difficult to apply the concept of team performance in a non-competitive situation such as management rather than manufacturing[55]. Teamworking has been introduced in an international company using IT to create a virtual team network. There is a flat structure that enables people to work cooperatively and share knowledge. It describes breakthrough thinking which sets a seemingly unattainable target and scours for ideas to meet it[56]. Core competence is defined as being "a combination of complementary skills and knowledge bases embedded in a group or team that results in the ability to execute one or more critical processes to a world-class standard". The creation of competencies through the routes of evolution, incubation or acquisition are examined, and comments are made on how to ensure sustainability[57].

Wageman points out that there has been some disenchantment with self-managing teams, but identifies critical success factors - having a clear and engaging direction through to developing team norms that promote strategic thinking[58]. Eisenhardt, Kahwajy and Bourgeois focus on the problem of ensuring that constructive conflict within teams does not descend into dysfunctional conflict, drawing their advice from research involving 12 teams. Those that were the most successful in keeping personality out of discussion exhibited distinct tendencies: working with more, rather than less, information; developing multiple alternatives/options; creating common goals for teams to support; using humor; balancing power between the management team; seeking consensus with qualification, e.g., if total agreement is not possible, then the senior manager abitrates[59]. Paper and Johnson have examined the literature on organizational learning, organizational memory, empowerment and creativity and argue that, despite the great interest shown in these concepts, there has been little work to identify the links between them. Having studied some major US organizations a matrix has been developed which shows the management challenges faced by organizations, depending on the extent to which their teams are empowered and have mechanisms in place for the organization to retain the knowledge generated by its teams. There is a need to develop the corporate memory (through documentation etc.) if advantage is to be taken of the employees' creativity and problem solving abilities[60].

People Management

Coff discusses the value of human assets indicating that they can be a source of sustainable advantage because tacit knowledge and social complexity are hard to imitate. Organizations need to be able to cope with associated management dilemmas and he has developed a framework for coping with this challenge[61]. The question of a psychological contract developed on employees' beliefs about the reciprocal obligations which they have with their organization, and the feelings of violation and anger when they perceive that the organization has not fulfilled its obligations are discussed by Wolfe Morrison and Robinson. It considers how violation can be minimized or prevented[62]. In many countries organizations are shedding staff and Dearlove describes the inept way in which this has been handled in some UK organizations. Poor termination interviews can affect morale amongst staff who are retained. It is suggested that outplacement specialists can assist, and that training be provided for managers who are inexperienced in termination interviews[63]. Another UK study examines the reasons why people work concluding, not surprisingly that money and security are important. Sixteen other reasons are listed including the need to feel valued, escape from home, intellectual challenge, and enjoyment. These are related to the work of Maslow and Drucker, and it is emphasized that motivation and morale are important factors to consider when managing people[64]. Arnold and Johnson question whether formal mentoring has the career and psycho-social benefits claimed for it. A survey revealed that psycho-social benefits were gained to a greater extent than the career-related benefits. Guidance is provided for organizations considering whether to set up mentoring schemes[65].

Performance Appraisal

Robotham and Jubb raise the question as to whether the competence approach to measuring the performance of managers is the most appropriate, despite its wide use. They focus on the difference between managerial effectiveness and effective management[66]. Longenecker also questions the effectiveness of performance appraisal for managers identifying ten main causes of failure which include unclear performance criteria, a poor working relationship with the boss etc.[67].

Career Development

The effect of delayering and plateauing on career frameworks is examined by Baruch and Peiperl who conclude that the traditional career paths have disappeared and fast tracking is a thing of the past. They question the nature of the psychological contract between the organization and talented managers, suggesting that it will have to be based on an honest assessment of what can be offered in terms of career prospects. Amongst other possibilities they suggest that entrepreneurship and lifelong learning might offer the managers opportunities to develop and use their skills[68]. A study carried out in Canada examines the same question and lists actions that can be taken by the individual and the organization. Whilst it may be unavoidable, strategies must be put in place to ensure that plateaued employees do not feel frustrated and demotivated[69]. One HRM issue of growing importance is that of dual-career couples. An Australian study concludes that the problem is complex demanding sacrifices from one or other partner at times, and posing particular problems for women. It provides guidance on how organizations can help dual-career couples[70].

A survey of management development in the UK found that many targets set ten years ago had been met, with more training and development than in the past, and far more support from senior managers and their organization[71]. Winterton and Winterton report a study which indicates the benefits obtained from competence-based management development[72]. In an interview with Chris Argyris the question of how people learn is discussed. He summarizes his work on double-loop and organizational learning, and describes how learning can be transferred from a training session to the real world. He underlines the importance of people understanding the gap between what they know and what they do, arguing that if people can challenge the defensive thought processes which govern their actions, they can be more effective in their work[73].

Equal Opportunity

There is a growing awareness of cultural diversity in the workplace, and in the interaction between staff and clients. Denton provides an overview of the development of human culture from its beginnings after the Ice Age, examines how culture defines who we are and how we behave, and how this may be applied in organizations today drawing on the experiences of Xerox[74]. Milburn considers that communication practices within organizations are related to their culture, and that cultural rules dictate the way in which organizations can learn from diversity programmes. For this reason communications can present problems and that there is a need to scrutinize policies for cultural assumptions[75]. The question of the differences in assumptions held by individuals in cross-cultural groups is discussed by Smith and Berg. They describe three processes for encouraging group acceptance of these differences as the basis for effective learning[76].

The extent to which women have progressed in management roles continues to be an issue of concern. Simpson observes that the climate is generally more supportive of women, but that token women still experience the same barriers and marginalization as Rosabeth Moss Kanter found in the 1970s[77]. Duke reports that despite a UK university taking action to promote equal opportunity, progress was slow and the evidence of cultural change was patchy[78]. A study carried out in Norway examined work experiences and job and career satisfaction among professional and managerial women. The findings are compared with a Canadian study and are consistent with regard to organizational support being related to job and career satisfaction[79]. Many of the initiatives to assist women are seen as being inadequate, creating resentment among men and failing to change the fundamental structure of the organization. It argues for an approach based on changing organizations, not women, believing that techniques which challenge the basic assumptions of men and women about work and gender, such as skills audit and training, will be more effective in the long run[80]. A series of recruitment interviews were analyzed to assess how they were commonly structured to ensure equal opportunities and remove the potential for gender balance. It found that the training given to interviewers helped to eliminate overt bias, but that the perception of what a manager is still conforms to a male stereotype, and the behavior of both the interviewers and the candidates reinforce the idea that managing is a masculine role[81]. Burke and Black draw attention to a male backlash in organizations and discuss six reasons for the current increase in backlash which is an underdocumented field[82].

Lewis investigated whether family friendly policies are part of an overall organizational change which will change the culture and structure of work, or whether they will simply be a benefit offered to employees of some organizations. The benefits to be gained by organizations are reviewed[83]. The effect of the family upon a career has been studied by Morris and Nocera who feel that corporate America misunderstands the needs of working parents[84].

The degree to which affirmative action has been effective in the USA is questioned since only 2% of the executive positions in the top 1000 Fortune companies in the US are occupied by people of color. A group of executives of color consider the issues why white business people feel uncomfortable with them in professional settings[85].

Age discrimination in the UK is considered by Taylor and Walker who explore the labor market position of the older worker and set out ways in which public policies on age discrimination might develop[86]. This theme is taken forward by McDonald and Potton who question whether the European Union can help the older worker[87].

With teleworking increasing Murray makes the case for a formal agreement, separate from a contract of employment, which would formalize the employer/employee teleworker relationship. This would cover employer and employee relationships, who pays for what, provision and use of equipment and computing issues, health and safety, etc.[88]. Brocklehurst describes a research project into homeworking finding that contrary to management expectations, the existing team sense was eroded and several homeworkers felt a challenge to their identity, losing the feeling of being "at work"[89]. The feeling of insecurity is also reported by Moon and Stanworth who pinpoint a number of benefits and costs of flexible working practices and offer a charter for employed teleworkers[90].

Techniques

This section focuses on techniques for managing. Schein discusses the past, present and future of organizational development (OD). He foresees the blending of OD and organizational learning, the discovery that learning is a social process, an increased emphasis on tacit knowledge and skills, and an increased understanding of the impact of culture and sub-culture[91]. Argyris also examines OD over the past 40 years and notes the changes from client-centred support to support for effective action, and shifts in the strategy for change[92]. Raelin distinguishes between two branches of action research - action learning and action science which may help OD practitioners[93].

Blake looks back at grid organizational development which brings together seven theories of leadership to promote excellence[94].

Lovelock and Ashworth proposes a technique called SCQuAre to help managers sell their ideas[95]. A growth has taken place in the use of 360-degree feedback. The implications of self-other rating agreement for HRM is discussed[96]. Hauschildt examines the effectiveness of a range of techniques to stimulate creativity including brainstorming, synectics, bionics, morphological analysis and brainwriting. He identifies the problems and weaknesses associated with them[97]. Briggs and de Vreede explain how electronic group support systems can improve communication and decision-making at meetings[98], whilst Hill describes collaborative software for online conferencing reviewing the major packages[99].

The reliability of SERVQUAL is questioned by Lam and Woo who indicate that there is instability in the technique over time, and hence question its usefulness[100]. The use of SERVQUAL within an Australian University to measure quality is described by Pearson[101].

Mystery customer research is growing in popularity, and a paper describes this technique which seems to be very close to the participative studies carried out in libraries. A mystery customer visits organizations to test the quality of provision of services[102].

Finally two papers focus on marketing. Bhote draws attention to deficiencies in market research and outlines methods for understanding customer requirements[103]. Four types of marketing have been identified from a literature review. They are transactional marketing, database marketing, interaction marketing and network marketing[104].

Reviewing the literature of management is challenging, and the outcomes will depend on the methods use to carry out the exercise. My impression is that there is a return to consider the human aspects of management, that many questions still remain to be answered, some techniques develop and mutate over the years, but this search did not throw up any new gurus or approaches to management such as the re-engineering of a few years ago. But this is an impression that may well be incorrect.

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