

AUTOMATION IN LIBRARIES - CURRENT TRENDS

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I apologise for not being able to address you in Greek.

In my work as an administrator in the United States foreign service library programme, I currently look after 14 libraries in Southern Europe, in Portugal, Spain, Italy, Greece, Turkey, Cyprus and Malta. And I love being in Cyprus. So it's a great pleasure for me being here and it is an honour for me to have been asked to address you.

What I would like to do is to give you, first of all, an overview of the current trends in the marketplace in the U.S.A. as far as library automation is concerned, because it is booming. Then I would like to discuss how we got here, what happened. Then I would like to talk about some critical factors in automating libraries, which are the same whether one is in California or in Cyprus.

Libraries have to create a strong stand when we talk to the companies that develop the programs for us. And no matter where in the world we are, there are certain aspects of automation that librarians have already experienced in the United States and Europe. There are significant factors that are very important to keep in mind.

But first of all the marketplace. It's growing and has grown steadily since 1982. Just to give you an example, in 1986 there were 193 installations in the United States of automated library systems and in 1987 there were 302. That's a 56% growth rate in just one year and we are waiting anxiously for the report which will come out again this April about the past year 1988.

These figures have surprised library automation experts. They did not expect this kind of a growth rate. They thought that we would level off for a while. What happened? Why are libraries automating at such a fast rate? There are several reasons. One is the fact that the cost of computer hardware and software has declined. There is an estimate that the cost of computer components relevant to library operations is likely to decline 25 percent per year, without adjusting for inflation, which is considerable. Then there is another reason. Established companies that sell library automation software have now added some of the missing parts; some of the missing modules that we had been looking for, for example, acquisitions and serials. You want to be able to check in books; you want to be able to order online; you want to check in periodicals online, to claim and so forth.

So this trend has encouraged smaller libraries and smaller library systems to get into automation. And among the statistics I quoted, you have a lot of smaller library systems which suddenly found the economic climate much more appealing and more librarians were able to convince their funders, their managers, that automation is indeed something they should do.

Another reason why the marketplace in 1987 jumped so far ahead is because of what is happening in the foreign market. In Asia, for example, one of the big companies in the United States, CLSI, is going to automate the national library in Beijing. GEAC, I am sure you all know, is a big Canadian company and it has automated a number of libraries in Europe, including ones in Portugal, in France (the Bibliotheque Nationale), and in Italy (the Free University of Firenze). Other Canadian companies are entering the American marketplace. ~~As they were saying in a recent article, all of a sudden the United States is a foreign marketplace because there are seven excellent Canadian companies. So it's a free-for-all and everyone is in there doing something.~~

The trends that we then see with this competition are interesting. The larger companies such as GEAC, such as CSLI, such as NOBIS, said, well there's too much competition. It's not good for the field, there's too much competition.

But librarians do not agree because they are becoming much more sophisticated and they're dealing with these companies in a very very educated way now. It has taken us a long time but I think we can finally hold our own with these very aggressive companies.

One of the things that librarians have asked for repeatedly and which has prompted the data processing industry to move toward is creating library software that is machine independent, that is that it can operate on a much wider variety of hardware. Right now library software that is being produced today can be used on virtually every major computer system.

Also, another thing that American and Canadian librarians are very **anxious to see and that is that the computer industry allow different** interfaces so that you can not only talk to other systems but that you can talk to your jobbers. Take, for example, the dealers of your American and British periodicals (maybe Epsco in Holland, or Faxon in Holland, or companies like that). You want to be able to sit here and communicate with them electronically to get a read out on the status of your orders and to find out what is available. This is not

something that is predominant now. It's coming. They're working on it very hard.

There is another aspect of the computerization of libraries that American librarians have been very adamant about and that the industry has been slow to deal with and that is standardization. Standardization is very important. Whatever format you use in your cataloguing, whether it is UniMarc, a variation of Marc, or a format used in Greece, for example, it is important that you have a standard developed in your own country or in a larger region. And the software vendors finally realized that for them to survive in the library marketplace they were going to have to conform to a certain standard.

So the word is that the marketplace is healthy and it is growing and will show unlimited growth in the future, which is good for librarians because we can choose. There's much more for us to choose from **and we can see what is happening and develop our own systems in-house**. A lot of people are doing that. How have we reached this point? What has happened in the computer industry which allows us to be in a position today where we can say we are thinking of automating. It was terribly expensive 10-15 years ago. But something happened which has allowed us to be in a position to choose today.

In 1965 when the Library of Congress started their library computerisation programme they had a big mainframe. Mainframes are for large libraries, for wealthier institutions and prohibited a lot of smaller libraries from even thinking about automating. University libraries sometimes tied in with the mainframe in the computer centre of their university, but this did not prove to be such a satisfactory solution. **The computer, the main computer processing area [of the library] should be a part of the library, not a part of the university computer centre.**

Then the minicomputer came on the scene and the minicomputer allowed mid-size institutions to automate. But it wasn't until the microcomputer hit the marketplace in 1977 that libraries seriously became interested. The first microcomputer in the United States was an Apple computer and in 1977 when it hit the market all you got was a box with a microprocessor and very limited memory by today's standards. Sometimes you didn't get a monitor, you used your television screen.

A lot of library programs were developed between 1977 and 1981, some very good, some very poor.

Libraries bought them, but they realised in some cases that they had made terrible mistakes. A lot of libraries were paying a lot of money. Some decided to wait a while and see what other people were doing and to take advantage of their mistakes.

But the market was a free-for-all. In 1981 something happened that was very interesting. The IBM PC came on the market in the United States and IBM, which is a giant in the computer industry, did something that was important. It standardized the microcomputer market in America to the point where today, just three weeks ago, I was offered some software and I asked if it was IBM compatible. That's a catchphrase that all of us use because there is so much out there.

But we can't afford to buy different hardware. Software has to work on the equipment we initially purchased, that we had invested in. And it got to the point where we said, "O.K. if it can work on an IBM we'll take it."

And then, of course, you had a lot of hardware clones developed that were like IBM and that's where we are today and they're becoming cheaper and cheaper.

So the advent of the microcomputer did a lot of things. It de-mystified the computer. The computer is a wonderful tool. It seems so complex and unfathomable to use but it really is very simple and people can learn to use it in a relatively short time and to apply it to their own daily situations.

The microcomputer can be used to solve the most ordinary, common problems. Just look around you. The video stores are checking out their materials by computer. The hotel I just stayed at in Athens had a computer keeping track of their guests and their reservations.

I was with a Greek friend in a store called MotherCare. They had a computer and there they were with their light pens checking off their inventory as people were purchasing things.

Computer companies will look around and they'll say OK we have automated grocery stores, we have automated the video rental stores. What can we do next? Ah, libraries, that's a wonderful

market. Maybe we should do something about automating libraries. So eventually, I think you are going to feel the pressure from the computer industry. This has happened in other places.

How do you become an educated consumer of computer software and hardware? Librarians in the States at first didn't know anything; they were ill-prepared and they didn't know how to select and use the microcomputer hardware and software and they made mistakes. They bought equipment because the companies were there, they had developed software and they were selling it. Librarians made a lot of mistakes.

Then they became sophisticated little by little, the hard way. How do you become a sophisticated consumer?

You read everything that is available. I just brought with me three magazines that we currently have in the [American Centre's] library here in Nicosia. Computers In the Schools, for example. Byte and Datamation. These are just three journals among many that are available to bring you up to date; to keep you current with what is developing in this particular field.

You have comparative reviews in these journals. You have new sources for development and changes. You have advertisements. Sometimes you can learn an awful lot from just advertising.

You can educate yourself by going into the video stores and seeing how they're using their programs and what kind of programs they bought.

See how software applications are used in everyday situations and think about how they can be applied to your own situation.

You can form user groups. We may have bought the same hardware and we may have all kinds of problems, but we can get together once in a while and discuss them and try to work them out among ourselves and find other colleagues in the same boat.

You can go to fairs and exhibits of software and hardware. A lot of these are currently underway. The computer industry consistently stages such events.

Your personal contacts at Association meetings such as this one where you have a chance to talk to colleagues about their experiences are [valuable sources of information].

When you investigate the marketplace you will see that a lot of the programs used in practical situations are not library specific. However, they provide a valuable opportunity to learn about general applications.

You can, of course, use general software in a library situation e.g. word processing, to take care of voluminous and repetitive library correspondence. Spreadsheets that are used by accountants can be used to manage budgets and prepare fiscal reports. Keeping your statistics on a computer is much easier and you can tabulate them much faster. You can use data management software, for example, to maintain name and address files.

But library designed software is best. One of the reasons is that even the small library creates a lot of paper and a lot of records that have to be maintained and that require storage in the computer. So you want as much storage as you can get and advances in storage devices are what we're going to see as future trends in this industry.

Properly integrated into library operations the microcomputer will have a great impact and it will make it possible to do more in terms of processing materials, providing services and of evaluating the effectiveness of [library] activities.

You will see that eventually the computer will become as common as the telephone and the lesson for librarians is that the computer will be as easy to use [as the telephone].

What is the impact going to be on our library operations? Eventually, I think we will move from technical services into public services because we will need to support remote access, we will need to support teaching our users how to find materials in an online catalogue.

The critical factors that need to be kept in mind when you start automating are that you have to have management commitment, you must have funding, access to equipment, control of the equipment and you must have a supportive and realistic attitude on the part of your management.

As far as funding is concerned there should be plans for maintenance, training and replacement. Your management must also allow you to take risks and to make mistakes because you probably will. We all have and we'll make them again and again.

In planning [for automation] do you get an in-house consultant (is there someone on staff who is knowledgeable in this area) or do you get an outside consultant? An outside consultant should know both data processing and library operations. That is one of the most important aspects of automation. In a lot of American libraries we learned the hard way because at first consultants did not know enough about libraries. The computer industry simply didn't know and they pushed material too fast at librarians without realising all the intricate systems with which we are involved.

Even if you have a consultant it still means that you and your staff will have to spend an awful lot of time with that individual to make sure that everything is covered that needs to be covered.

You need commitment and time and energy from your current staff to work with these people. A good consultant should be able to relate technology to your situation but will need a lot of information about processes, data description, catalogue records, order records, textual data, circulation policy, etc.

The rule of thumb as far as automating libraries is concerned is the following and I have this from a talk I had with the Vice Director of automated services at the Library of Congress. She was saying, for example, that the Library of Congress system is very old and out of date. It started in 1965 and in 1965 it was state of the art. She said the Library of Congress was going to have to re-systematize and there was a debate as to whether they should start over again or work with the current system they have. It is an enormous job. She noted that the Library of Congress may be the biggest system in the world, but it also has the worst problems.

The message is that sooner or later you will have to get new equipment. You will have to get new software.

Get as much memory as you can afford and realize that your users want more and more functionality in your products. For example, with the online catalogue how are your users going to access it, what is the optimum? Of course, author, title, subject, publication date, ISBN number, language and keywords. Keywords are very important, as is searching by Boolean logic (where you combine search terms, eg. Cyprus and archaeology, not modern). Adjacent searching (so that the system can go in and find a particular book that is within certain parameters) is also important.

You want quick response time and inclusion (and this is optimum and not very many systems have this) of every word that is in your record. You want status information. Is a book checked out? Is it available? You want to be able to initiate inter-library loan requests online and so forth.

The computer catalogue is very liberating and frees the user from those standardized subject headings that we have imposed on users. A very famous American historian who was against automation said that keyword searching was a stunning blow for individual freedom as it releases the mind from the shackles of highly authoritarian classification systems developed by librarians.

It is a very interesting success story to have an online catalogue that allows the user to go anywhere in your collection and bring search terms together to find what he needs.

So, in short, a system must be easy to use, must have clear instructions and good documentation. You must have brochures, pamphlets, videos teaching people how to use it and librarians must be very helpful. Start small and work out the problems.

This is the advice from the Library of Congress. A smaller system has a great advantage and a library system which is going to automate today has an even greater advantage. Here in Cyprus you can take advantage of everybody else's mistakes and take advantage of all the new systems that are being developed because as I said before, the marketplace is booming.

Thank you.