


# Access to a World of Content with the Joint National Library Solution for Public Libraries and School Libraries in Denmark



Author  
Martin Brøchner-Mortensen,  
Vice President, Systematic

Systematic is currently in the midst of deploying a new Joint Library System in 94 % of the municipalities in Denmark. This is an open-source system based on recognised standards, and it provides all the public libraries and school libraries that have signed up with access to search in a large shared data repository. That in itself is a unique, ground breaking feature. A really interesting aspect of this project also lies in the development process leading up to tendering.

The Joint Library System in Denmark has been created on the basis of close cooperation between more the half of the Danish municipalities. It is a system developed via partnership and dialogue, rooted in a desire for greater cooperation, co-creation and user influence. To understand the background to this project, it is important to know a little more about the public library sector in Denmark.

## The library sector in Denmark today

Nowadays, many things other than conventional book lending are taking place at Danish libraries. Technological developments have changed people's patterns of work and leisure, and there is strong competition for users' time and attention. Traditional services have therefore been supplemented with new opportunities, and many libraries now act as informal learning, inspiration and meeting places with activities tailored to a 24/7 society – with everything from

lectures, and musical events to workshops and play areas for children.

There have been ongoing cutbacks in the Danish library sector for many years, and in several places libraries have been combined with the municipality's public service centre<sup>1</sup> or have become a component in a municipal cultural or community centre. The role of public libraries has changed much in recent years – a development that is expected to continue.

With increased self-service and extended opening hours, the lending of e-books and audiobooks is increasing and there is growing consumption of digital materials (both books and other forms), while the lending of physical materials is falling off – a trend that is expected to continue in the future. The Danish Agency for Culture<sup>2</sup>, however, maintains a strong focus

on reading, and libraries are seen as playing an important role in stimulating a love of reading among children and young people in Denmark.

## The public library sector in Denmark – a historical perspective

In 1939, Folkebibliotekernes Bibliografiske Kontor (Danish Public Libraries' Cataloguing Office) was founded. This institution has since changed its name many times, and is now known as Dansk BiblioteksCenter (DBC – the Danish Library Centre). DBC is a non-profit organisation owned by the Danish state and the institution's work is based on a democratic vision of ensuring all Danish citizens equal access to knowledge and culture. DBC's main task is to operate and develop the bibliographic and system infrastructure for libraries in Denmark. This is achieved through the preparation of a Danish national bibliography and a user-targeted library cataloguing system as well as by operating and developing [www.danbib.dk](http://www.danbib.dk) (a shared catalogue for Danish public, educational and research libraries i.e. a "tool" for professional/library staff) and [www.bibliotek.dk](http://www.bibliotek.dk), which provides Danish citizens with shared access to the libraries' collections.

Over the years there has been a drastic change in the library world and in their role in society, and the Danish libraries have now changed from being mere "book repositories" to being

<sup>1</sup> *Borgerservice (Citizens Service) provides Danes with access to public-sector institutions, and helps with inquiries about passports, driving licenses, health insurance, child care, civil status, etc.*

<sup>2</sup> *In Denmark, it is Kulturstyrelsen (the Danish Agency for Culture) that is responsible for maintaining a cooperative library system and for extending such collaboration between libraries of different types. The agency is part of the Danish Ministry of Culture, and it is the agency's task to implement the Danish government's cultural policies in fields that include relations to public and research libraries, and general public education.*

just as much digital institutions and information providers. The Danish libraries are renowned for always having been technologically advanced, and thus having been in the vanguard of technological development. In the Danish library sector, there has been an early focus on using technology for more than just document management.

It is a crucial point in the Danish libraries' development that there has traditionally been a political, democratically rooted desire for a kind of centralised management and coordination of library work, including cataloguing and making this easily accessible.

In 1993–94 [www.danbib.dk](http://www.danbib.dk) opened, with access to the inventory at Danish libraries initially reserved for library staff, but in 1998 the idea was extended to provide access to all citizens, leading to the launch of [www.bibliotek.dk](http://www.bibliotek.dk) in 2000. [www.bibliotek.dk](http://www.bibliotek.dk) was – and is – an online search catalogue for the citizens of Denmark, and covers all holdings in all public libraries – both through a website and an app. There is not only the opportunity to apply for materials, but also to order them for pick up at a local library. Over the years, [www.bibliotek.dk](http://www.bibliotek.dk) and the app, “Biblioteket”, has developed still further, and today they represent a virtual library containing substantial amounts of digital materials.

In a wider perspective, the impact of setting up [www.bibliotek.dk](http://www.bibliotek.dk) was that Danish libraries collaborated more than ever, via cooperation that transcended municipal boundaries.

This cooperation led to the setting up of Dan-skernes Digitale Bibliotek (DDB – the Danish Digital Library) in 2000, a binding partnership between *Kommunernes Landsforening*<sup>3</sup> (Local Government Denmark) and the Danish Agency for Culture. This collaboration is intended to strengthen the libraries' ability to manage and disseminate electronic media such as e-books and other web-based materials.

### A shared data resource was the beginning

In 2008, DBC began working with two of the most important Danish municipalities to create greater links between physical and digital resources. One result of this collaboration was a single repository of all existing resources – a form of joint data repository.

<sup>3</sup> *Kommunernes Landsforening (KL – Local Government Denmark) is a private interest and membership organisation for all 98 municipalities in Denmark. KL's purpose is to support Danish municipalities' shared interests, and to contribute to Danish municipalities being able to carry out their duties, in both political and administrative terms.*



In 2010–11, the parties involved took a step further. They examined the library systems in use in Danish municipalities and concluded that the Danish public libraries were making use of a large number of different systems – each working independently with a separate solution. The DBC partners now launched development of a shared content management system (CMS) to link to the joint data repository, and invited other municipalities into the project. Over time, 55 Danish municipalities became part of this system, which features a range of different services available to citizens from the libraries.

With 55 Danish municipalities cooperating in the project, Local Government Denmark and the Danish Agency for Culture began to be interested and launched an investigation into the system's source code and governance. The conclusion was that both elements were strong enough to form the foundation for a national solution, and in 2013 it was decided to collaborate on tendering a contract for a new joint library system, which was initially to cover all Danish public libraries and school libraries.

### Why the Joint Library System?

In other words, the Joint Library System was created on the basis of a request from a number of Danish municipalities and libraries to create a shared library system and thus break away from the stand-alone solutions that had been operated by both public libraries and school libraries. At the same time, there was also a strong desire to have a system based on open-source software architectures, sharing and joint development.

The goal for the project was to create a modern system featuring interfaces based on recognised standards and integration with other

municipal systems. This was to be a solution that does not require all libraries/municipalities in Denmark to run their own local IT operating set-ups. These were to be replaced by a shared solution based on joint use of national databases/catalogues, joint operations and centralised system administration.

Overall, the objective of the new joint library system is to:

1. Ensure a modern system based on an open platform that enables interfaces with other relevant IT systems and types of service.
2. Enable greater efficiency by wholly or partially transferring system administration in each municipality towards consolidating operations in fewer units.
3. Ensure lower IT expenditure in Danish municipalities' library systems, by operation in a non-monopolised market.
4. Create a system that embraces and supports cooperation between public libraries and school libraries, making it possible to achieve additional benefits by carrying out certain tasks on a joint basis.
5. Remove the individual municipality's supply obligation.

The Joint Library System is one of the world's largest projects in the library sector

The Joint Library System was developed on the basis of a shared requirement from the majority of Danish municipalities. From day one, the project has therefore been guided by representatives from the municipalities participating. Organising a project of this magnitude using this form of cooperative set-up is unique, and libraries cooperating nationwide on a joint solution had not been seen before.



The project has been organised by a steering committee with participants from KOMBIT<sup>4</sup>, Local Government Denmark and some of the participating municipalities. In addition, an advisory board with several representatives from the participating municipalities tracked the process closely. A monitoring group with particular focus on the organisation itself has also been part of the cooperating parties' project organisation. This monitoring group also includes representatives from several of the municipalities taking part.

The unique feature of the project is the extensive commitment from municipalities throughout Denmark, both in the work associated with the requirements specification and continuing throughout the project with the involvement of all groups within the project organisation. Internally, each municipality made great efforts to make it into a unified project, and the municipalities have thus now taken on "ownership" of the digital development of public libraries and school libraries.

Moving forward, the permanent development organisation will consist of a steering group with even broader municipal participation than the original, and there will be a large steering group with 8–9 representatives from the municipalities (CIOs, library heads and others) who will be responsible for prioritising between the development proposals that emerge as municipalities get started with the Joint Library System.

## What can the Joint Library System provide?

The core of the Joint Library System is Cicero Library Management System (LMS), which Systematic is engaged in continually developing, operating, supporting, deploying and extending.

Cicero LMS is a new back-end system that integrates all types of existing front-end solutions. This scalable open-source system can handle all the administrative processes associated with materials' service lives in a library, and has been created out of a desire for a unified, transparent, national structure for libraries in Denmark. The system was developed on the basis of requirements laid down by the municipalities participating, but can also be used in the administration of all types of libraries and collections of material.

In the development of Cicero LMS, there has been a clear focus on reducing operating costs

(via significant saving on the cost side) and on making administrative routines easier. The system resides on an open-source platform designed for all types of libraries. With Cicero LMS, customers get effective support for procedures that include administrative search, inter-library loans, purchasing, booking and dealing with both library materials and relevant fees. The system also includes basic improvements and simplifications of workflows for staff.

## Scalable administration system

Cicero LMS is a scalable administration system that can be used with libraries' existing front-end solutions. The system is based on new technology and solutions that make workflows easier for library staff.

Further functionalities can be added from a suite of modular solutions, making it possible to configure a system to suit each library's particular requirements. At the same time, libraries can choose to work together on a shared back-end set-up, but still tailor their front ends to meet different requirements.

### Budget and scope

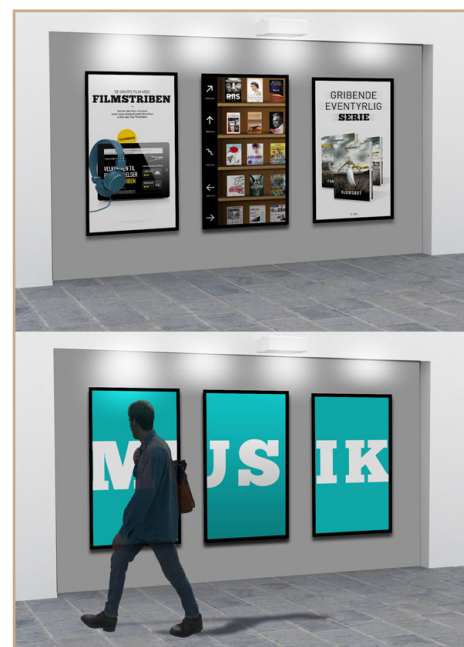
- 92 municipalities with over 1500 locations in full service early 2017
- 1\$ spend => 92\$ value
- Total contract value: USD 21 million
- Annual running cost: USD 1 million
- Cost savings per municipality on average: 30%

## Suite of solutions that support libraries' outreach work

Experience, communication and accessibility are key features in the library of the future. With a wide range of solutions that operate with Cicero LMS as well as other library systems, it is possible to create activity, synergy and inspiration in the library space, in both the physical and the digital worlds. Some examples are:

### Discover table

With the discover table, users can explore themed book stacks, videos and images. The table provides a highly intuitive presentation of library materials. At the same time, the discover table encourages conversation and discussion among library users.



## Digital posters

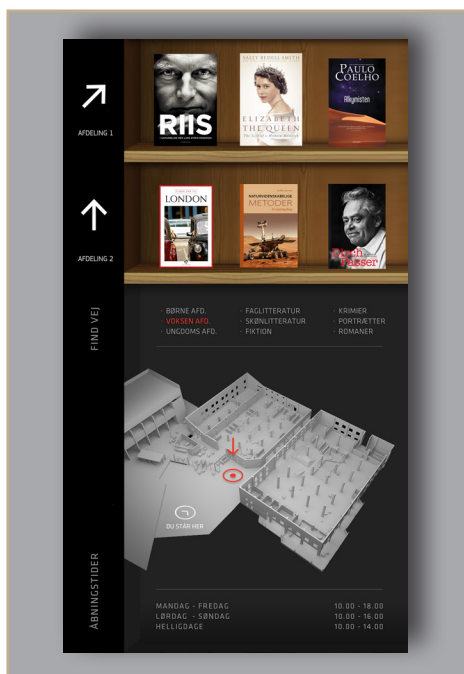
Digital posters contribute to creating vibrant, dynamic spaces within the library. Attractive and easy to use templates makes it simple for library staff to communicate in a visual and effective way about events at the library, new books, news, etc.



## Book dispenser

"Pick yourself a book from the machine" – the book dispenser makes it possible to display the books' front covers as well as other information about each book, the author, items in the library inventory or "other reading" – and thus promote library materials in a more appetising and easily accessible way.

<sup>4</sup> KOMBIT is the Danish municipalities' joint IT company, and is owned by Kommunernes Landsforening (Local Government Denmark). KOMBIT runs the project for the Danish Municipalities.



### Wayfinding

Clear, simple signage makes it easy for library users to find both genres, topics and books. The system only displays books that are actually available on the shelves, and provides an overview of the library via interactive displays, thus providing both insights and overviews.

### Apps

With different library apps, citizens have mobile access to libraries when needed. E-books and audiobooks can be downloaded instantly, digital and physical materials can be explored and reserved and loans renewed, news and events investigated, etc. Librarians can use apps "on-the-floor" with users and strengthen the service delivered.



## Increased cooperation between public libraries and school libraries

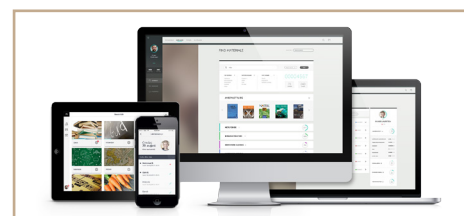
Increased co-operation between public libraries and school libraries is an important focus area in the Danish municipalities. With the Joint Library System the platform for a closer co-operation between the different library agencies is established.

School libraries must continue to play a larger and more active role in learning processes at schools in Denmark. New primary education legislation explicitly states that all Danish schools should set up a school library, which will serve as an educational service. In future, school libraries must work more closely with public libraries and also participate in the school's overall learning environment. This means school libraries will be responsible for providing an overview of the learning resources available, for making them accessible, and for supporting teachers' planning, implementation and evaluation of educational activities.

A new initiative in Denmark – Brugerportalinitiativet (User Portal initiative) – aims to give schoolchildren, teachers and school managers a comprehensive digital approach to local IT systems. This new initiative will take effect from the academic year 2016/17, and comes as a response to the challenges the Danish educational sector has experienced with regard the digital domain. There have been many good experiences with IT in state schools in Denmark, but there is a desire to speed up digitalisation still further.

### Systematic develops new IT-learning solution

The Joint Library System creates a solid platform for successful learning solutions at schools. Systematic is currently in full swing with the development of an IT learning solution of the future for schools and other educational institutions. The new learning solution draws directly on the Joint Library System, thereby providing access to almost unlimited resources.



The solution provides educators with inspiration, shared knowledge and an overview of different types of resources available – such as materials from publishers or from other teachers' course programmes, thus facilitating better course planning. The teacher no longer has to switch between different systems and search platforms, but can use the new learning solution to get a direct overview and access to the entire range of physical materials, network resources, digital learning resources, and other digital materials, as well as other teachers' already planned and delivered courses. In other words, access to searchable resources and knowledge at an unprecedented level.

Earlier, the teachers had to navigate many different systems, leading to inefficient use of materials and lack of overview with regard to content. There has also been limited co-operation between schools and external stakeholders such as public libraries, museums and businesses. It has been difficult for teachers to share knowledge among themselves, and the use of IT and new technologies have been limited, while users employ a range of different platforms and devices.

Using this learning solution, students will be able to work on their activities digitally, and they will be able to communicate with their teachers and share material with others. Students, teachers, school principals and parents will all have access to learning programmes, course objectives and learning assignments. Teachers will have opportunities to plan, implement and follow up on the learning process, share knowledge with colleagues and communicate with both students and their parents about students' academic progress and wellbeing.

### About Systematic

Founded in 1985, Systematic is one of the largest privately owned software and IT companies in Denmark. The company employs around 500 employees, representing 23 different nationalities. In addition to its headquarters in Denmark, Systematic has subsidiaries in Australia, Finland, Germany, New Zealand, Singapore, Sweden, the United Kingdom, the United States and the United Arab Emirates.

Systematic develops and delivers software and system solutions for customers in five core business areas (Public & Private, Healthcare, Defence, Intelligence & National Security and Library & Learning). Systematic has partners in 15 countries and has sold solutions to custom-

ers in 50 countries worldwide. The company is CMMI-certified at level 5 and has a solvency ratio of 45.5 % and an AAA credit rating.

Library & Learning is one of the important new focus areas for Systematic. For the first time in its history, in 2014 Systematic acquired another company when it took over Dantek, a supplier of solutions for Danish libraries that had won the tender for the Joint Library System. The mission for Library & Learning is to bring libraries and educational institutions to the next level of digitisation through integrated and innovative digital solutions, that enables customers to provide their users with better service at lower costs.