Evergreen

The Evergreen integrated library system (ILS) was developed to support the needs of library consortia. This open source product began in 2004 to serve a large consortium of public libraries in Georgia and has since been implemented by many other consortia and individual libraries in the United States. Evergreen has seen limited adoption internationally.

Evergreen's Birth in Georgia

The state of Georgia has a long-standing record of providing strong support for its libraries through statewide programs. This support can be seen in the Galileo initiative to provide all the members of the University System of Georgia with electronic resources and in shared ILSs for its academic and public libraries. In 2000, the University System of Georgia implemented a shared ILS based on Voyager for all of the public universities and colleges. In 2015, Galileo selected Ex Libris Alma to replace Voyager, and it was placed in production in 2017. In a parallel strategy for the public libraries in the state, the Georgia Public Library Service, a unit of the University System of Georgia, launched PINES (Public Information Network for Electronic Services), a large-scale shared automation and resource-sharing project. This initiative was initially based on a proprietary ILS product, which was subsequently replaced by locally developed open source software.

The initial version of the Evergreen ILS was developed to support the PINES consortium of public libraries. PINES was conceived as a potentially statewide library service in which any resident in the state was entitled to a card enabling them to borrow materials from any participating library. Public libraries throughout the state would be able to make use of the shared ILS at minimal cost rather than purchase and maintain their own. The program has been enormously successful, with only a handful of libraries in the state opting not to join. Currently, PINES serves the small to mid-sized communities and rural areas in Georgia. Libraries serving urban areas have not joined the consortium, notably the Atlanta-Fulton Library, Cobb County Public Library, and Gwinnett County Public Library.

The PINES project was launched in 1999 based on the Unicorn (now Symphony) ILS from Sirsi Corporation (now SirsiDynix). Prior to this time, many of the public libraries were using outdated automation systems that might not have been able to handle the anticipated problems with the turn of the new millennium, often called the Y2K bug. The first phase of implementation included 99 libraries, which was expanded by another 100 in September 2001. By 2003, the system was supporting 1.3 million users and 15 million circulation transactions. The two phases of the project represented about $1 million of revenue for SirsiDynix.

The high cost of the software and problems with performance and functionality led the administrators of PINES to review its technology options. In June 2004, the Georgia state librarian, Lamar Veatch, announced that the Georgia Public Library Service would develop a new ILS to support PINES and eventually move away from SirsiDynix Unicorn ILS.[1] This was a bold move that went contrary to the overwhelming trend away from locally developed software. It was a calculated risk that ultimately resulted in the creation of software that met the needs of PINES and other organizations with similar needs.

Development of the software, which came to be known as Evergreen, began in 2004 following the announcement of the state librarian. The GPLS

internal development team included Brad LaJeunesse, Jason Etheridge, Mike Rylander, and Bill Erickson. These developers were tasked to create an ILS that would stand up to the intense load of the statewide PINES consortium and offer functionality suitable for its public library members. (See the Technical Characteristics section on page 23 for details.)

At the time when Evergreen development began, the PINES consortium included 252 public libraries in 123 counties throughout the state.[2] These libraries had combined collections of over 8 million items and 1.6 million individuals registered to borrow materials. This consortium was one of the largest in the country at the time and thus required robust and scalable technology infrastructure.

Following a development period of 28 months, the software was placed into production for the 252 members of PINES on September 5, 2006. The transition from Unicorn to the new Evergreen software was successful. This project had gained wide attention at the time, sparking interest in other libraries and consortia in trying out the software.

Equinox Software, Inc., Formed

With the successful launch of Evergreen for PINES, many other libraries approached GPLS expressing interest in the software. The state agency did not have the resources or interest to provide support for Evergreen outside its own jurisdiction. It was also deemed that it would be a conflict of interest for a state agency to devote resources to libraries outside the state.

These concerns drove a strategy to spin a new company oriented to the ongoing development of Evergreen that could also provide support services to libraries implementing the software. Equinox Software, Inc., was launched in February 2007 as a private for-profit company to provide development and support services for Evergreen. The company was founded by many of the members of the development team that created Evergreen within PINES, led by Brad LaJeunesse as president. (LaJeunesse resigned in November 2014 and was succeeded by Mike Rylander.)

The formation of Equinox meant that the original developers would no longer be on the state payroll. Evergreen was released as open source software, meaning that Equinox, or any other organization, could provide related services. The Board of Regents of the University System of Georgia, the parent institution of the project, retained ownership of intellectual property, such as the Evergreen trademark and copyrighted materials.

Equinox Software was able to attract customers for its Evergreen support services. The PINES consortium itself wanted to continue the relationship with the individuals who had created Evergreen. By July 2007, a support contract was in place for Equinox to provide services for the Evergreen installation supporting PINES.

In addition to PINES, Equinox attracted a steady slate of consortia and individual libraries to contract for its support services. Other early clients of Equinox included King County Library System in Washington, the Kent County Public Library in Maryland (which migrated from Evergreen to Polaris in 2017 as part of the Eastern Shore Regional Library), and the Michigan Library Consortium (Grand Rapids Public Library originally participated, but now has an independent installation of Evergreen).

The public libraries in the Canadian province of British Columbia were also early supporters of Evergreen. The Public Library Services Branch, an agency of the British Columbia provincial government, invested $1 million in the development of Evergreen. This marked the beginning of the British Columbia SITKA Consortium, an opt-in province-wide Evergreen implementation now supporting over 100 library branches, including some in the neighboring province of Manitoba.

Sequoia

Equinox built its business on its expertise and technical capacity to provide services for Evergreen and other library-related open source software. Equinox needed extremely reliable and scalable infrastructure to support its hosting services. The company launched a new hosting platform and value-added service that was branded as Sequoia in January 2014. This new platform enabled Equinox to efficiently deploy the many different installations of Evergreen and Koha it hosted on behalf of its customer libraries. Sequoia, as a multitenant hosting platform, enables Equinox to manage many different instances of applications, including Evergreen, Koha, and FulfILLment, with more reliability and faster performance than would be possible on standard servers and storage configurations. Equinox created Sequoia as proprietary software for data center management, optimized for the open source products it supports. This hosting platform strengthens Equinox's business position. The reliability and performance Equinox can potentially deliver via Sequoia will exceed what other hosting providers may be able to offer or what a consortium or library could reasonably expect to achieve with its in-house resources.[3]

Equinox Open Library Initiative

Equinox made a major change in January 2017, shifting from a for-profit company to a nonprofit organization. At that time, all the personnel and assets of

Equinox Software, Inc., were transferred to the Equinox Open Library Initiative. The new organization is a nonprofit corporation with 501(c)(3) tax-exempt status. The organization continues with the same leadership and personnel structure as before, with Mike Rylander serving as president and Grace Dunbar as vice president.[4]

At the time of the transition, Equinox employed seventeen personnel. It stands as the dominant, though not exclusive, provider of Evergreen support services. Equinox performs about 80 percent of the development for Evergreen, with the remainder carried out by the broader Evergreen development community.

Shifting Support Trends

The Georgia Public Library Services shifted to mostly self-sufficient support for PINES in 2012. Although it purchases consulting services as needed, the regular operation of PINES relies primarily on its in-house technology personnel. This scenario represents a major challenge for Equinox, where an organization will take advantage of short-term services for migration and implementation, but in the long term may be able to function without paid service contracts.

Some implementations exhibit the opposite scenario. The PaILS/SPARK consortium of public libraries in Pennsylvania originally implemented Evergreen in 2011 through a local agency, but ultimately decided that it needed better technical infrastructure and additional expertise. PaILS entered into a hosting and support agreement with Equinox in August 2013.

As an ILS developed for consortia, Evergreen can have implementations subject to multiple layers of support. In most cases, the consortial office will provide at least an initial level of support for issues reported by its member libraries. Any problems the consortial office is not able to resolve would then be escalated to the support provider. Over time, the consortium may gain sufficient expertise with a product such as Evergreen that it no longer needs external services.

A number of consortia that initially contracted with Equinox for Evergreen support have shifted to varying degrees of self sufficiency. Some may move from a comprehensive set of support services to a more project-based arrangement.

LYRASIS Offers Open Source Support

LYRASIS, a nonprofit library services organization, launched a Technology Services program in 2011 to provide services to libraries with open source software products. The program included hosting and support services for Evergreen as well as the Drupal and DSpace open source repository platforms. Michigan Evergreen, Maine Balsam Library Consortium, and Evergreen Virginia contracted with LYRASIS for support. LYRASIS withdrew its Technology Services program in 2015, and those customers shifted to other support options. LYRASIS's brief venture in open source support reflects the challenges of working in this business environment.

Governance

Although Equinox has been the dominant provider of development and support services for Evergreen, it is only one of the organizations comprising the broader Evergreen community. The Evergreen Project partners with the Software Freedom Conservancy for assistance with governance and administrative functions. The Software Freedom Conservancy is a nonprofit organization providing advocacy and services for open source projects. It serves as the designated organization for the Evergreen Project to receive funds and hold its intellectual property.

Software Freedom Conservancy
https://sfconservancy.org

An Evergreen Oversight Board has been established as the top-level governance body for the Evergreen Project. Its nine elected members are drawn from service organizations, consortial personnel, and libraries involved with Evergreen.

MassLNC Evergreen Development Initiative is a collaboration among the consortia in the region to pool funds for Evergreen development projects. The initiative was launched by Central/Western Massachussetts Automated Resource Sharing and the North of Boston Library Exchange and has been joined by Bibliomation, the British Columbia Libraries Cooperative, Georgia Public Library Service, and Evergreen Indiana.

The Evergreen software has been developed and released under the GNU GPLv2 open source software license.

Functionality

Evergreen is an ILS offering a suite of modules addressing standard areas of functionality needed by public libraries, including cataloging, circulation, acquisitions, serials control, and an online catalog. Consistent with other ILS products, it excels at the management of physical library collections, such as print materials and media collections. Similar to Koha, Evergreen does not fit within the genre

of library services platforms, which are designed to manage complex collections of electronic resources as well as physical collections.

Evergreen has been under constant enhancement for over a decade. Libraries can expect a reasonably complete feature set. Although libraries evaluating Evergreen will want to carefully review the documentation and release notes, some of the general categories of functionality include the following:

- **Circulation.** As an ILS oriented to consortia, Evergreen offers a powerful and flexible circulation module. Loan and renewal periods can be set according to library, patron type, and item type. In addition to standard overdue notices, Evergreen can send out courtesy reminders about items approaching their due dates.
- **Patron record management.** Installations of Evergreen can define multiple patron categories, each of which can have distinct options for loan rules and collection of statistics. Evergreen supports linked patron accounts for scenarios such as associating the accounts of multiple family members.
- **Cataloging.** Evergreen includes support for the description of library materials using the MARC bibliographic formats. The system includes the concept of enabling bibliographic records to be grouped into "buckets" to organize or process related items. Evergreen includes the ability to search and retrieve MARC records from external bibliographic sources using its built-in Z39.50 client. It also includes a Z39.50 server to provide search and record retrieval for external applications. Evergreen includes validation of appropriate fields in MARC records with corresponding authority records. As an ILS designed for consortia with many libraries and branches, Evergreen includes many features to streamline the creation of holding and item records associated with any given title. The system enables the creation of metarecords to group different editions and formats of a title together.
- **Acquisitions.** The original release of Evergreen did not include acquisitions. This module was added beginning with release 2.0, completed in January 2011. Features available include placing and receiving items ordered, managing vendor details, paying invoices, and collection funds management. The system supports EDI for placing orders with vendors electronically and for acknowledgements of receipt.
- **Serials.** Evergreen includes features for the management of print serials subscriptions, including the ability to create predictive checkin patterns, route received issues, and issue claims for expected issues not received.

- **Online catalog.** Evergreen provides a web-based online catalog with basic and advanced search options as well as browsing by title, author, subject, or series. Record displays can include cover art linked from a variety of sources or subscription services. The search interface includes facets presented on the left side for users to narrow search results, according to author, subject, genre, series, or other library-defined categories. Results can be sorted according to relevancy, author, title, or publication date. Search options include limiting results to a specific library or displaying results from all libraries in the consortium. Libraries implementing Evergreen can configure its catalog to display their own logos, branding, or other standard header features.
- **E-book integration.** Libraries with e-book lending services can integrate the Evergreen online catalog to present these items along with print materials in search requests, with links to view availability, to download or view, or to add to the hold queue if not available. These e-book integration features are available for OverDrive and OneClickdigital, with the ability to create customized implementations for other digital lending services.
- **Self service.** Evergreen supports the ability to work with self-service lending and return kiosks using the SIP2 protocol.
- **Resource sharing.** Evergreen can participate in resource-sharing systems using standard protocols such as Z39.50, SRU, NCIP, or SIP2.

Satisfaction and Suitability

As an ILS optimized for consortia, Evergreen fits well into the trend of libraries seeking opportunities to lower automation costs and to collaborate to share their collections. Consortially shared ILS implementations have existed since the earliest phases of the library automation landscape, but the dominant model has been for libraries to implement individual systems. In the last decade or so, there has been more movement toward libraries that had previously automated independently joining a shared system.

From its inception, Evergreen has been designed to support consortia comprised of mostly small to mid-sized libraries. Table 3.1 lists the major consortia that have implemented Evergreen. In addition to these consortia, a number of individual libraries have implemented the software.

Even though Evergreen was developed for public library consortia, it also gained attention from some academic libraries: University of Prince Edward Island, the Conifer consortium, Algoma University, Laurentian University, Northern Ontario School of

Table 3.1. Major consortia using Evergreen

Consortium Name	Geographic Area	Members	Types
Linn Libraries Consortium	Oregon	6	Public, Academic
Georgia PINES	Georgia	287	Public
SC Lends	South Carolina	58	Public
Evergreen Virginia	Virginia	26	Public
Sage Library System	Oregon	71	Public, Academic, School
Conifer	Ontario	4	Academic
Bibliomation	Connecticut	72	Public
Missouri Evergreen Consortium	Missouri	38	Public
Central-Western Massachusetts Automated Resource Sharing	Massachusetts	136	Public
NC Cardinal	North Carolina	140	Public
PaILS: Pennsylvania Integrated Library System	Pennsylvania	88	Public
British Columbia SITKA Consortium	British Columbia, Manitoba	106	Public, Academic
Howe Evergreen Consortium	New Hampshire	9	Public
Stirling and East Dunbartonshire Library Consortium	England	41	Public
King County Library System	Washington	48	Public
Evergreen Indiana	Indiana	148	Public
Niagara Libraries Evergreen Consortium	Ontario	11	Public, Academic
North of Boston Library Exchange	Massachusetts	36	Public
Pioneer Library System	New York	43	Public

Medicine, and the University of Windsor. The University of Windsor withdrew from Conifer and implemented Alma in 2013. There are also some smaller academic and school libraries that use Evergreen as part of a regional consortium.

Apart from these libraries that implemented Evergreen in its early phase, there has not been significant movement of academic libraries toward Evergreen. It lacks the sophisticated electronic resource management functionality, knowledge bases of e-resource holdings, and discovery indexes expected for academic and research libraries, which tend to invest most of their collection budgets in subscriptions to electronic resources rather than print materials.

Libraries using Evergreen have given the product and its support providers generally positive rankings in the annual Library Automation Perceptions Report. Figure 3.1 shows combined responses for all responses from libraries using Evergreen, regardless of support arrangement. The chart shows a generally upward trend in satisfaction in most categories since about 2010.

There has been only one large municipal library to date that has implemented Evergreen. The King County Library System, one of the largest and busiest public libraries in the United States, became interested in the mid-2000s in investigating the possibilities of implementing an open source ILS to replace its Millennium ILS from Innovative Interfaces. The library wanted flexibility and customizability not easily accomplished in its existing environment. In March 2007, KCLS become one of the earliest clients of Equinox, which it had selected to provide consulting services to enhance Evergreen. As a major municipal library, it required many features and performance thresholds that were not already present in Evergreen.[5] KCLS transitioned from Millennium to Evergreen in October 2010.[6]

Even within Georgia, the software has not thrived in libraries serving densely populated urban areas. Currently, out of the 62 public library systems in Georgia, 52 participate in PINES, 4 use Polaris, 4 use Symphony, and 2 use Library·Solution from TLC.

The transition to Evergreen for KCLS was extremely challenging, especially in the performance and features of its online catalog. In January 2013, the library transitioned away from the Evergreen online catalog and implemented the BiblioCore discovery interface from BiblioCommons. Many of the other issues KCLS experienced with Evergreen have been largely resolved. The implementation of Evergreen at KCLS had the potential to pave the way for other municipal libraries. Instead, it continues to stand as the only library in that tier to venture into the open source ILS realm.

Migrations to and from an ILS are one factor to consider relative to the suitability or viability of an ILS. Since its inception, there has been an ever growing number of libraries using Evergreen. There has been some churn regarding support arrangements, but most libraries that have implemented Evergreen have remained steadfast. Exceptions include the Merrimack Valley Library Consortium of 40 libraries in Massachusetts, which recently migrated from

Evergreen to SirsiDynix Symphony; the Albemarle Regional Library, which withdrew from NC Cardinal and migrated to TLC's Library·Solution; the Bradford County Library System, exiting from PaILS to implement Apollo from Biblionix; the Kent County Public Library in Maryland, which migrated from Evergreen to Polaris; the Santa Cruz Public Library, which used Evergreen for two years before migrating to Polaris; and the Thompson-Nicola Regional District Library System in British Columbia, which moved from Evergreen to Polaris. This number of transitions falls well within what would be expected with any currently supported ILS product.

Figure 3.1
Satisfaction Score by Year for Evergreen. Source: Marshall Breeding, "Perceptions 2016: An International Survey of Library Automation," Library Technology Guides, January 25, 2017, https://librarytechnology.org/perceptions/2016.
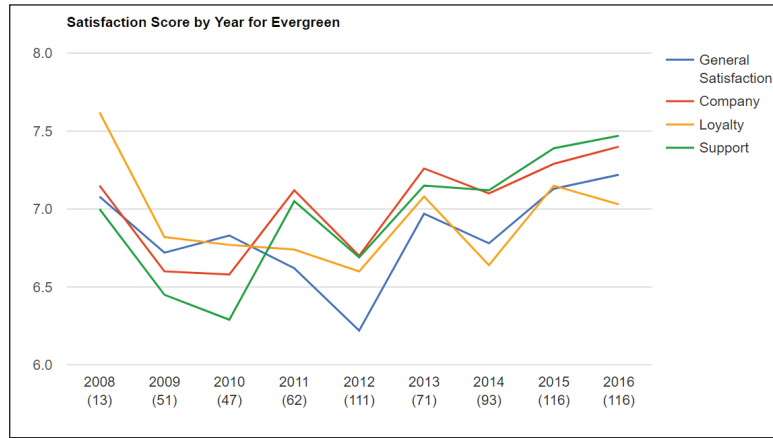
Technical Characteristics

As an ILS designed for large consortia of public libraries, Evergreen in its initial development needed a robust and scalable technical architecture. Contemporary enterprise-level business applications were based on the services-oriented architecture. These applications would rely on a transaction processing engine and a services bus able to manage communications among requests.

The Evergreen development team opted to create their own processing and communications engine, which they called the Open Scalable Request Framework, or OpenSRF. This architecture was created in support of Evergreen, enabling it to distribute requests among multiple servers and enabling any instance of the application to handle heavy transaction loads. It relies on the Extensible Messaging and Presence Protocol, or Jabber, to handle messages within the environment. OpenSRF was intended to be a generalizable architecture that could be adopted for other development projects, but to date it has been used primarily by Evergreen and related projects such as FulfILLment.

Evergreen uses the open source PostgreSQL relational database to handle transactional data. PostgreSQL was designed to be an enterprise-class database able to handle high transaction loads. It is generally perceived as being more complex to administer than MySQL.

Most of the Evergreen server application is programmed in Perl, though some critical components are written in C. This hybrid approach avoids some of the performance bottlenecks that might otherwise occur with wholesale reliance on an interpreted language such as Perl.

The Evergreen online catalog is web based and will operate well with any modern browser. The staff interface was developed with the XML User Interface Language (XUL) and is deployed as an extension to the Firefox browser. The Evergreen staff client would need to be installed on each workstation. A new web-based staff client has been under development since 2014.

Forecast

Evergreen has found a fertile niche as the open source ILS oriented to consortia comprised of public libraries. It has prospered among library consortia in the United States and Canada, especially those serving mostly small to mid-sized public libraries. Evergreen has seen incremental growth in recent years, especially in terms of additional libraries joining existing consortia. The adoption of Evergreen internationally has been modest. The rocky implementation of Evergreen for the King County Library System has not sparked confidence in Evergreen for large municipal libraries, so it seems unlikely that it will see substantial adoptions within that sector unless some major breakthroughs occur. Evergreen is backed by both a strong development community, primarily focused in the United States and Canada, as well as a major nonprofit support organization. Overall, the prospects of Evergreen remain strong, and it is likely that it will see a steady and incremental growth in the numbers of libraries and consortia it serves.

Evergreen Resources

Key resources related to Evergreen are available on the Evergreen Project site.

Evergreen Project site
https://evergreen-ils.org

Equinox Open Library Initiative
https://www.equinoxinitiative.org

Notes

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