

# A leap into the future – migrating to FOLIO – a cataloguer's perspective

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*The aim of this paper is to share the journey of the Durban University of Technology (DUT) Library experience as one of the first African libraries to adopt an open-source integrated library management system. It is hoped that other libraries may benefit from this migration experience. The main aim of an Integrated Library System (ILS) is to improve productivity for both users and librarians. The migration from the old library management system to the new system encountered many challenges which included limited time, data corruption and quality issues. The cataloguing section is usually the main focus area that deals with the bulk of the migration data corruption issues. This paper highlights and focuses on a cataloguer's perception of the new ILS Future of Libraries is Open (FOLIO) and the way the cataloguers adjusted to the new system. Evidence of the migration process was obtained from reports and active participation in the implementation process.*

**Keywords:** FOLIO, integrated library systems, migration, cataloguing

## 1 Introduction

Prior to the migration, which refers to the process of replacing the old library system with a new or different library system, the Durban University of Technology (DUT) library was on SirsiDynix - Symphony. During the 18 years with SirsiDynix, although the staff created extensive workflows for the smooth running of the library system, there were many challenges on the system itself and many obstacles with certain modules. One of the challenges encountered was the complexity of producing simple reports and the non-function of the serial module in accordance with the DUT Library standards. With changes in the environment and the renewal costs of the SirsiDynix - Symphony system, it was time to investigate a new system that would satisfy and suit the changing needs of the library and its users. The collection size at the time of migration from the SirsiDynix – Symphony to the Future of Libraries is Open (FOLIO) was estimated at about 140 000 bibliographic title records. The evaluation and choosing of an Integrated Library System (ILS) can be a long and intense process. Libraries usually decide to upgrade or change to another ILS based on the changing needs of the environment and their users (Breeding 2016a). The emerging technological changes and the constantly changing new web technologies compel libraries to investigate new options. Librarians were also frustrated that their current ILS does not cover all their resource types and the inflexibility of the system to handle evolving resources (Kamble, Raj & Sangeeta 2012). This resonated with the DUT librarians as the current library system was restrictive with certain resource types.

Discussions at the DUT library to explore a new library system began in 2019. A formal task team was established to propose a new library system. This task team consisted of staff from each section of the library, inclusive of Acquisitions, Cataloguing, Circulation, Information Services, and the Library Information Technology. This task team, led by the Information Systems and Resources Manager, the Library Director and the two other library managers as well as the representatives from various sections, was formed to evaluate and assess the different ILS products on the market. In August 2019, vendor sessions were held to assess and evaluate the different systems on the market. Examples of library systems that were evaluated by the task team included ALMA, SIERRA, SirsiDynix Symphony, BLUEcloud, WorldShare Management Services and FOLIO. Breeding (2016) explains that when reviewing existing ILS towards the selection of a new system, it is expected that the new system should transform the traditional academic library. A new system should promise to be one of its kind, aimed at altering the academic library and the way that it operates. Kamble, Raj and Sangeeta (2012) acknowledge that many libraries are drawn to the open-source software systems as it allows libraries to freely modify and use the software. Within the context of evaluating the various systems, Table 1 provides a summary of the library systems that was evaluated by the DUT task team in 2019.

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**Table 1 List of ILS evaluated**

<b>Systems evaluated</b>	<b>Product Vendors</b>
ALMA	Ex Libris
SIERRA	Was initially part of Innovative – but later acquired by Ex Libris
SirsiDynix Symphony	Universal Knowledge systems (UKS)
BLUEcloud	Universal Knowledge Systems (UKS)
WorldShare Management Services	SABINET
FOLIO	EBSCO Information Services

After an evaluation of the six Integrated Library System (ILS) products, the DUT library chose to migrate to FOLIO which is an open-source library services platform. The decision to select this open-source service platform was based on the cost of the system implementation and the flexibility of the system. Many libraries would like to keep up with current technologies and enjoy the benefits of new advanced library systems. However, for most libraries, the cost of the new system is usually the stumbling block, and the open-source system draws interest as the costs are reduced (Kamble, Raj & Sangeeta 2012).

According to Singh (2013), the Open-source Software (OSS) industry is growing in popularity amongst libraries. Open-source Software is popular within innovative libraries as it increases advancement in many development initiatives within the library environment (Breeding 2016). The main point of interest in an open-source system is usually the free licensing, reduced costs and maintenance of the system that appeals to librarians. Although Singh (2013), alludes to the fact that many libraries investigate and evaluate best practices, there are still common problems and many misconceptions related to open-source software packages. One of the concerns that was discussed among the task team was the security and maintenance of the system. Another factor that was considered included the cost of hosting the system as well as the budget and the cost of the system. Although an open-source platform may not charge a licensing fee, there are other costs involved such as hosting services costs and hardware systems (Breeding 2016a).

Although the open-source system is marketed as a free source, costs may be incurred for the initial establishment of the system and hosting costs. Knowledgeable and skilled staff with an interest in open-source systems are also needed. These concerns were highlighted and discussed along with the ability to customise the system and the freedom related to the flexibility of the system to suit individual library needs (Singh 2013). Kamble, Raj and Sangeeta (2012:392) concur that an open-source system is the way to go in order to reduce costs. The initial setup services may be high but once the system is established, the costs are reduced as trained inhouse staff can maintain the system. The DUT Library was fortunate to have a skilled and knowledgeable systems librarian who was well versed in open-source software.

Libraries are attracted to the idea that open-source software is freely available and easily modified and customised to suit individual library needs. In the case of the DUT Library, the current infrastructure was suitable to accommodate an open-source system and the licensing fee for the system was free. However, costs had to be factored in for the hosting services. According to Gutierrez (2019), the strength of the ILS to host the various library modules is worth evaluating. Some ILS would have a strong Cataloguing module, whilst the Circulation module would fall short and not suit the library's needs. The main draw is that most open-source platforms are community oriented and supported by the librarians themselves (Breeding 2016a).

## 2 Choosing an integrated library system

The academic library is constantly changing in response to the Durban University of Technology's strategic plan and to meet the changing needs of the research community and library users. The library system needs to be a multifunctional and adaptable system that enables academic libraries to manage, catalogue, and circulate information resources easily to the user community (Müller 2011). As Müller (2011), explains that when choosing a library system, it is important that the decision is made considering the systems performance, its flexibility and ability to adapt to the everchanging needs of the users. It is important that the ILS can seamlessly integrate with all other systems as well as simplify the existing workflow. The DUT task team engaged robustly with the vendors of ILS as mentioned in Table 1. Vendors received lists of questions to enhance the clarity pertaining to the functionality of different systems. The questions to the vendors differed as specific and unique information was required to clearly comprehend the context and functions of individual ILS. Of importance in general, was to determine whether the systems could generate and print labels, if the systems could integrate with other university systems, could seamlessly integrate patron details, and could automatically update the exchange rates with most currencies. The main areas that were focused on in the evaluation of the different systems as per Table 1 related to the different modules for each section of the library inclusive of Acquisitions, Cataloguing, Circulation and Serials. The compatibility of the systems with a discovery layer was also interrogated. A discovery layer is software package that "sits" on top of a traditional online catalogue that has enriched searching features and content (Gutierrez 2019). Areas of focus

when evaluating the various systems included, the cost, interchangeable services such as the link resolver's functionality, compatibility of MARC record services, data usage collection and metadata management system, to list a few.

When FOLIO was introduced to the DUT task team, the EBSCO Information Services team that presented this platform explained that FOLIO is a "brand new library service platform" which "moves beyond the traditional library management system and allows anyone to freely build on its core functionality". FOLIO is an open-source system that is transparent in freely allowing access to its coding repository, platform roadmap and software releases (FOLIO 2022). FOLIO provides choices for libraries in managing the 'back-office' functions while providing support with various other external integrations such as discovery layers, RFID self-checkout systems, university database integrations and accommodates the integration of print and electronic resources (FOLIO 2022). This paper provides insight into the migration process to FOLIO at the DUT library from the cataloger's point of view. The factor that led to the decision to choose FOLIO was based on the sustainability of the system and the ability to support various resource management services. As FOLIO is an open-source system, there is flexibility with customising the system to suit the respective library needs. FOLIO is centred on the library community and is focused on promoting innovation and transforming the traditional library in response to the evolving environment and changing needs of the users (FOLIO 2022). While the above views are from the FOLIO creators, the DUT Library librarians had an opportunity to share their thoughts on the new system. At the official FOLIO launch, a few librarians shared their views on the new system. A librarian focused on the community side of FOLIO: "*FOLIO provides DUT Library with the opportunity to engage with an international group of librarians in the ongoing development of a truly modern library services platform that directly addresses the needs of libraries and their users*".

Another take on the system from another librarian "*FOLIO is a collaborative open-source library system that allows libraries the flexibility to evolve in a continuously changing environment. It is a new way of working and requires a mindset shift amongst library staff*". Another librarian stated that "*Even though FOLIO does not have all the most critical components of the Cataloguing workflow such as validating authority control, there is room for development as it is in its infancy*".

### **3 Reason for choosing FOLIO**

The parent institution (DUT) is moving forward with its strategic plan that encourages creativity, innovation, and flexibility to evolve with the changes in the learning and research environment. The university endorses a cloud-based support system and encourages its staff, students, and researchers to be adaptive in the everchanging technological environment (ENVISION 2030). The library is moving forward to align with the university's goals for a more digitised cloud-based environment. The DUT Library required a revision of its ILS to enable it to effectively manage both physical and electronic resources on one system with lower costs, as well as be adaptive and flexible in a fluid technological and learning environment. The library required a system that could align with the DUT's values and the drive to advocate for open access resources. A further consideration towards selecting a new ILS related to ensuring that the new system delivered a better user experience and customer service to the patrons.

Linked to the vision and values of the DUT, FOLIO as an open-source system, has a close relationship with the global community of academic librarians, development organisations and service partners to support both the traditional and other resource management functionalities. This system integrates both print and electronic resources and is built for innovation and is able to evolve to meet the changing functionalities of the library environment. Since FOLIO is an open-source software platform, there are no licensing restrictions and offers the core modules for any library to function (EBSCO FOLIO 2020). Finance and local service support was another guiding reason for the choice of selecting this ILS. The current discovery layer Summon was at the end of its contract with the DUT Library and the seamless integration with the FOLIO EBSCO solutions, was another attraction. The expectations and support from the local EBSCO and UKS vendors were another appeal to the system. The vendors were part of the implementation period that included data migration and training of all staff. All training and new upgrades to the system functionalities are included in the total costs that were negotiated with the vendors and the DUT Library management team.

### **4 Process for migration**

The migration process was handled by UKS, who worked with the EBSCO Information team, as the library chose to be on an EBSCO-hosted cloud system.

#### **4.1 Project plan approval and communication**

Once the decision on FOLIO was made, there were several meetings with the DUT library management team and the vendors to discuss the way forward. The task team joined the discussions on the implementation process. Due to the pandemic and state-imposed lockdown, many of the meetings were virtual. The project plan was initiated by the vendor and shared with the task team. It was a tight timeline, and the project schedule provided a detailed plan that was explained to the team. The plan was clear with the deadlines for the tasks involved.

The project plan for the DUT FOLIO migration was as follows: Table 2 displays the projected timelines that was allocated to the project.

**Table 2 DUT FOLIO Project Plan**

	<b>Key Events and tasks</b>	<b>Timeline</b>	<b>Days allocated</b>
1	Project start date	1 March 2021	1
2	Pre-migration clean-up	3 March – 31 March 2021	21
3	Customisation of catalogue	1 April – 7 April 2021	5
4	Configuration of FOLIO system settings	20 March – 31 March 2021	8
5	Extraction of bibliographic data from old system	1 April – 2 April 2021	2
6	Loading of test batch onto FOLIO	5 April – 7 April 2021	3
7	Correcting of errors on FOLIO	8 April – 12 April 2021	5
8	Extract patron data from old system	13 April 2021	1
9	Load patron data onto FOLIO	14 April – 15 April 2021	2
10	Correcting of error load on FOLIO	16 April – 19 April 2021	4
11	Extract Circulation data from old system	20 April 2021	1
12	Load Circulation data onto FOLIO	21 April – 22 April 2021	2
13	Correct Circulation data errors on FOLIO	23 April – 26 April 2021	4
14	Extract Order records from old system	28 April 2021	1
15	Load Order records onto FOLIO	29 April – 30 April 2021	2
16	Correct Order record error load on FOLIO	3 May – 4 May 2021	2
17	Extract Serial records from old system	5 May 2021	1
18	Load Serial records onto FOLIO	6 May – 7 May 2021	2
19	Correct Serial records error load on FOLIO	10 May – 11 May 2021	2

Based on the project plan, staff were continuously updated on progress through various communication channels. Communication is crucial in any type of project. In this vein ongoing communication on the progress of the project helped to empower staff and ensured a sense of ownership (Singh 2019:352). Apart from having the right skilled staff on the task team and within the library to ensure a smooth transition during the migration, the constant interaction with the staff to update them on the process ensured buy-in and support for the migration process. The engagement with staff ensured that there was support for the new system and less resistance to change as staff was involved in the process (Zhu & Spidal 20156). Failure to communicate and “delivering the right message to the right person at the right time” would negatively influence the successful implementation of the project. The DUT library staff were kept informed and updated on the process from the start of the project to post-migration. Support for staff and the system is ongoing post-migration.

#### **4.2 Database clean up**

The migration to FOLIO was implemented across all sections at the DUT Library. However, contextualised in this article, the focus is mainly on providing detail related to the implementation of the Cataloguing module. The preparation before the actual migration was important. The main aim was to ensure that the catalogue of data was of a good quality and condition

to secure the migration process. It was important to prepare for the migration through the execution of a data cleanup process. Engelson (2016) mentions that if the data are not of good quality on the current system, it will not miraculously be of good quality on a new system. Unnecessary and unwanted data were deleted. Data was standardised to ensure that the correct validated authority controls were captured and saved on the old system, before migration.

Ensuring the standardisation of data and the clean-up of unwanted data was a lesson learned from a previous migration and it helped in the process to move only relevant data to the FOLIO. Familiarity with the old system allowed for various reports to be run to identify the errors and bad quality data on the system. This was corrected before migration. Decisions were made regarding old patrons and outstanding bills. It was also decided that it was not worth migrating old patron data of qualified students who left the university several years ago. Decisions were made regarding old weeded, discarded, lost, and missing items that may be suppressed but still stored in the catalogue and it was deemed not worth transferring these data to the new system. Once the migration was implemented, more time was spent on testing and attempting to customise the new system to suit the library's need rather than to clean the data. This type of discussions should be agreed upon before the actual migration to any new system as it would save staff time and energy.

### 4.3 Migration

Kohn and McCloy (2010) discuss three phases of a migration, inclusive of a phase-to-phase implementation, a one-phase option or going live with all the modules simultaneously. However, linked to the views of Gutierrez (2019) and Singh (2013) most libraries opt for going live with all modules at once for the two-phased approach which is to go live in phases, or all in one go. This can mean that each module is scheduled to go live on different days. Some libraries prefer to go live with the cataloguing database to ensure that all is well before attempting to go live with the Circulation module (Singh 2013). The advantage to going live in phases with one sectional module at a time, allows for that module to be thoroughly tested and passed before the next module is implemented. This allows any inconsistencies to be rectified on each individual module. Kohn and McCloy (2010) explain that going live in phases is one way of cutting costs during migration. It is cost-effective to go live in phases as Kohn and McCloy (2010) mentions as the library would only pay the costs per module implemented over a period of time. Going live with all modules simultaneously is risky, and all system staff and other library staff need to be available to sort out issues on the system immediately as it unfolds.

The DUT library opted to go live with all modules simultaneously. The task team and library management were satisfied with the testing and believed that the transition for the migration would be smooth with no major issues, as FOLIO is more of a backend system and would not have affected the public use of the various modules directly. All staff were hands-on-deck and on standby on the day that the system went live. Fortunately, there was a smooth transition as the DUT Library was not very busy. Luckily, the library was not very busy on the day FOLIO launched and patrons were very patient with the Circulation staff as they familiarised themselves with the new system. Patrons were receptive to the new system, as the librarians were available to help with questions and queries. The library staff had to face the major changes on the system itself and as they were trained on the system, the transition and acceptance of the new ways of working was accepted effortlessly. Due to an aspect of the cataloguing module not functioning, the cataloguers could not edit records immediately. The FOLIO trainer was present to help smoothen the transition and dealt with any issues that arose on the day the system was launched.

Once the decision to go with FOLIO was established, discussions started in earnest from September 2020 to lay the foundation for the migration. The migration timeline was tight as the library's current ILS contract was ending at the end of January 2021. An extension of the contract was negotiated until June 2021. The implementation of the system was managed and executed by a local service vendor UKS and the EBSCO team. Whilst UKS provided training and support services, EBSCO provided hosting infrastructure and integration services for the system. The task team that evaluated all the systems and selected the FOLIO, continued to navigate the various checkpoints of the migration process. This involved the staff representation from each section monitoring and assessing the various modules and testing each data load to ensure that there were no inconsistencies and issues.

The migration to FOLIO began in March 2021 with the eventual go live date of 1 July 2021. The pre-migration database cleanup was identified as the first task of migration. This premigration database cleanup and the preparation for migration was a short, rushed period which commenced from March 2021 until the actual migration in June. Fu and Carmen (2015) describe migration as a "time consuming and thankless task" and believe that for a successful and smooth migration, six months to a year should be allocated for the migration period. The DUT migration had a turnaround time of four months to navigate the preparation for the migration. The premigration preparation as mentioned in the database clean-up was time-consuming and exhausting for the librarians who navigated the workload. The main process during migration is the extraction and transfer of data from the old ILS to the new system. The data that was in MARC format on the old system was loaded onto the new FOLIO system in non-MARC format.

This caused challenges where the data that was loaded onto the new system had no access to edit the records through the usual cataloguing fields. At times, some of the new software releases and updates caused more challenges on the system.

The system did improve over time and allowed access to manage the MARC bibliographic data on the system with one of the software releases. The new releases allowed access to edit newly imported catalogued records. The bulk of the database cleanup was for the cataloguers to maneuver their way through. Many records were deleted or reworked to include missing data fields so that records could be captured seamlessly. This was not a smooth process, and many problems arose when working with the database. For instance, many bibliographic records lost their location statuses. Bibliographic titles with multiple copies were relocated on the system and had to be corrected and reinstated at the correct locations.

The migration to a new generation library system affected the need to review existing data. For example, bibliographic records without the 001 MARC field were corrected, as FOLIO could not import records in the absence of the 001 fields. The 001 Marc field in bibliographic records reflects the OCLC (Online Computer Library Center) control number that is a system generated number and is assigned by OCLC (Library of Congress 2000). This field is important in reflecting the holdings of a library by indicating whether the library has that particular item as part of the collection. A review of MARC fields was located and fixed for incorrect subfield tags or indicators on bibliographic records. All records that were attached to an 'UNKNOWN' policy had to be corrected or removed from the database. This included historical records that were migrated from the old system. All bibliographic records that were 'hanging' on the system had to be deleted so that no unnecessary records were migrated.

Missing lists on the long overdue items were compiled so that these records could be omitted in the migration. User records were corrected, where old patron records that were inactive or expired were deleted. Duplicate patron records were located and amended. A decision had to be made to either clean up or delete patron records with bills or any transactions that was older than a certain date or less than a certain amount. Patron details that were current were located and missing data, such as missing emails addresses, telephone number or addresses were added and corrected before the migration. Together with FOLIO, the library was moving onto a new Discovery layer. This meant that the new Discovery layer, Ebsco Discovery Services (EDS), had to be configured with the information about the library holding location. The underlying point was that FOLIO was an EBSCO product, so this relieved some of the pressure, as the library could communicate seamlessly with both the FOLIO and the EDS implementers at the same time. The main challenge was to correctly migrate all the data from the old system to the new system. A test batch of bibliographic records was loaded onto the FOLIO test environment in April 2021.

There were many errors and data loss that were loaded and captured on the test platform. Continuous testing and reloading were performed to ensure that the data was copied across correctly. The metadata fields that were not migrated were reworked on and the scripts redone to capture all the metadata fields. The test run was a pilot project to determine errors and fix them. No matter how thorough or how much of testing is done, there is always something that is missed during a migration. Bibliographic records with copies in more than one physical location lost separate locations after data extraction. The Serials locations were migrated under the incorrect branch or site libraries. These had to be manually cleaned and sorted. Some serials lost their holdings location and had to be corrected.

The circulation user records were loaded and tested in April and May 2021. There were also many inconsistencies with these data. The history logs of checkouts and bills were not migrated, and there were many other issues that had to be corrected. The discrepancies occurred due to inconsistencies in data loading and missing data. Inconsistency in data loading was expected, as with any migration. However, testing and correcting of error loads was time consuming. The support of the vendor (UKS) support and systems staff that oversaw the data loading and migration of data was very helpful and hands-on in correcting the error reports. Table 3 displays the total number of data that was extracted from SirsiDynix and migrated to FOLIO. The figures below are the number of successfully migrated records in FOLIO.

**Table 3 Database extraction and loading**

<b>Data type</b>	<b>Quantity</b>
Bibliographic item records	225808
Bibliographic title records	144620
User/patron records	187611

There were some failed data records during the test batch loads, and once the errors were detected and rectified, the actual data load onto the live server was a success.

#### 4.4 Training

Training in FOLIO began in earnest in May 2021. An overview training on the system was initially done for all staff. Thereafter, the training took on a more structured approach and training sessions were conducted according to groups related to the Systems librarian and staff, Circulation, Cataloguing, Acquisitions, Serials and Electronic Resource Management (ERM). Overall training for staff on the new Discovery layer EDS was conducted in June 2021. Testing on the test system was allowed for a limited period of time. This helped to cleanup more records and allowed for more changes before the go live date was implemented. Training sessions were intense and productive. The trainer was hands-on and knowledgeable, which enhanced the confidence of the staff to make the transition from the old system to the new system. The new ILS platform brought about new ways of working, and staff had to familiarise themselves with the new system. As part of the 'new norm', staff were forced to adapt quickly to changes related to the implementation of the FOLIO ILS. New work manuals were produced which outlined the process involved in working on each module and section.

#### 5 Cataloguing workflows

As previously indicated, the focus of this paper is on a cataloguer's perception of the implementation of the FOLIO ILS and adjustments required to implement the new ILS. Cataloguers at the DUT Library had to find new ways to ensure that

the catalogue was not inundated with unauthorised records. This required learning how to use QuickMARC<sup>2</sup>, which became available and functional with one of the upgrades. It also required learning how to edit the bibliographic records on FOLIO. FOLIO allows for essential metadata management functions such as creating, editing, deleting holdings and item barcodes, suppressing, importing, replacing, and overlaying bibliographic records. With each new software release, more functionality was awarded on FOLIO, which implied a continuous upgrade of knowledge and skills by cataloguers to use the FOLIO ILS effectively (EBSCO FOLIO 2020:8).

The bulk of the cataloguing process is completed in a software application called Inventory on the system. The Inventory application stores the bibliographic details, location, and item data. This application consists of three levels: the Instance, Holding and Item. The Instance record is the actual bibliographic record. This bibliographic record can be created on FOLIO itself or imported from OCLC. The Holdings level contains information about the location and shelf/call number. The Holdings record is always linked to an Instance record. The Item information contains data on the item identification or barcode and reflects the circulation status of the specific resource. The Item record is always linked to a Holding record. Every record is attached to a computer-generated unique identifier. The identifier is called an Instance Human Readable Identifier (HRID).

## 6 System limitations

FOLIO has faced many challenges and limitations since it was implemented as it is a brand-new library system. FOLIO has many community channels that have been formed to encourage the FOLIO community of librarians, developers, and vendors to participate in and share their experiences and challenges experienced on the system. This community attempts to share challenges and successes in resolving issues. Alternatively, since the system is hosted and maintained by a third party, system issues and challenges are channeled and handled by the service provider.

Stock take or inventory control is a bit of a challenge at present, as the system does not accommodate for this capability. Since FOLIO does not generate reports, it is a bit of a challenge to run an inventory of the library collection and have no reports to match against and weed out the unaccounted resources. The DUT library, together with UKS, is investigating ways in which to accomplish an inventory process of the library collection. As mentioned, the system does not produce reports that a library would likely require such as inventory lists, discarded and weeded lists including the prices, and so on. The statistical and reporting part of FOLIO is expected to be generated on another platform that is part of EBSCO called Panorama. Not much can be mentioned about the reporting and statistical system called Panaroma, as it is not functional and is currently being explored further. The non-existence of a reporting system on FOLIO is a huge strike on the system. It would be great if FOLIO were designed to produce reports on the various apps and export them to Excel or equivalent software.

In FOLIO it is not possible to validate authority records, which are crucial in providing accessibility to resources. Authority control is important to allow cataloguers to organise bibliographic data in a way that creates access points and allows the accessibility of library resources (IFLA 2019). The DUT cataloguers worked around this limitation in the FOLIO module by ensuring that any records that were imported, had the correct validated authority headings before importing to FOLIO. A further limitation in FOLIO is that records can only be imported from OCLC to FOLIO using the OCLC record number. This meant that the personnel who imported records had to be very careful and meticulous during the selection of OCLC records. Deletions of bibliographic records in FOLIO pose another challenge, as the record will always 'sit' in the source container and never truly be deleted from the catalogue. The issue of deletions will hopefully be fixed in one of the future software releases.

## 7 Recommendations

Based on the experience of the migrations, it was a good idea to test the data upload before the actual go live date. There were many loading errors that needed to be corrected. The Holdings locations were noted to be too long and complicated. Inhouse decisions were made on how to control site locations and not make the catalogue display a busy, complex screen. The holding locations on the old system were treated as an item status on FOLIO. Site-holding locations were either merged or deleted. The old system accommodated for various types of resource 'availability' to be streamed in one location, but this was not possible with FOLIO. This was one of the changes to which the staff had to adjust. Another was the new terminology on FOLIO that differed from SirsiDynix. All staff had to adapt to the new item statuses and the way it reflected on the library catalogue. Once an effective workflow process is established and staff became familiar with the platform, the process becomes easier. The usual resistance from the staff was expected. It must be noted that a migration to a new ILS is a major change for staff. The newer processes are bound to cause nervousness among staff. It is important to try to involve all levels of staff from the very beginning of the project. Constant communication to keep them updated is vital. The delay in a migration is usually expected, so plan around the delays. No matter how thoroughly the data is cleaned, there are always unforeseen issues that will need to be corrected post-migration.

In the case of the DUT library, it was very helpful to have representation from each section of the library on the task team. It was advantageous having key staff in place to help and deal with the configuration issues. The knowledge that each member of the task team had of their sectional modules and what they expected from a new system was helpful in

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<sup>2</sup> QuickMARC was created to be a MARC record editing tool, meant for quick edits of existing records on FOLIO (FOLIO Project 2020)

reviewing the various systems and choosing FOLIO. The constant review of data and the completion and submission of data is crucial and important for key staff to be part of the process. It is important to have a systems librarian or IT staff onboard who understands the technical side of any system as they play a vital role in the project. In the case of the DUT library implementation, the IT team's knowledge and understanding of open-source systems helped the task team make an informed decision on the system choice. Cataloguing staff are crucial in data cleanup projects and in ensuring that bibliographic data are transferred in the correct format. The cataloguers' insight of the database will help ensure that the data are in the correct sequence on the new system (Engelson 2016).

The main advice to anyone planning on migrating is to ensure that they are not rushed in this evaluation and migration process. Each phase needs to be allocated as much time as possible so that all aspects can be thoroughly evaluated and investigated to one's satisfaction before moving onto the next phase. Do not plan for another major project to run concurrently with a migration project. The DUT library had another project implemented at the same time, so it was stressful for all involved as some staff were involved in both projects. This type of scenario should be avoided as staff are stretched to their limit and it can be very exhausting for all involved.

The FOLIO community is open to suggestions from librarians, vendors, and developers to improve the system. Various community platforms are available for librarians, vendors, and developers to join and to interact with other FOLIO users. The librarians are encouraged to share their views on what they expect from the system and how it can evolve and to share their expertise as librarians to improve on the system. Vendors are encouraged to offer hosting and professional services, and developers are encouraged to share their expertise in developing the system by building and integrating applications with subject matter experts (FOLIO 2022).

## 8 Conclusion

FOLIO is a 'work in progress' system, as it is a brand-new ILS platform that relies on the FOLIO community and librarians to initiate suggestions and changes to the system so that the workflow is smooth and seamless. According to Zhu and Spidal (2015) a migration can be regarded as a success if the project timelines are met, the extraction and importing of the data is done with few or no failed loads, there is constant communication with the task team, implementers, and the rest of the library staff and when there is an active task team leading the project. The migration project at the DUT library was a successful undertaking despite the rushed and short allocated timeframes. The main concern of any migration is the transferring of the data from the old system to the new. In the case of the DUT library, the data loading to the new system was successful as all the data were transferred without any loss.

The test data loads aided in the success of the project, as errors were immediately resolved. It helped to have skilled, dedicated staff work on the project and within the library itself. The section representatives on the task team understood what was required and the knowledge of their sections and system modules helped make the project a success. The project was steered by a good project leader, in charge of the implementation phase. The project leader was good at communicating and updating the implementation task team as well as the rest of the library staff on the status of the project at regular intervals (Zhu & Spidal 2015). The new open-source system FOLIO is aligned with the institution's position and support for open-source systems and provides an integrated library and information system that can support the university's research and core business.

Librarians are encouraged to continue to share their knowledge and expertise on the various community FOLIO platforms to build and develop the system together with other users of the system. This community interaction and participation allows for many shared ideas and faster resolution of system issues. To understand more about the FOLIO community and what assistance is available, the FOLIO Wiki<sup>3</sup> and FOLIO Slack<sup>4</sup> community is a good starting point.

The library environment is fluid and academic libraries are evolving to align themselves with the parent institution to meet the challenges with constantly new technologies. It is crucial to choose and settle on an ILS that is flexible to meet the everchanging needs of the library environment. The challenge is sourcing a system that can be customized to suit individual library needs as well as allow for growth and to be 'open' to evolve to accommodate new and different forms of resources. The system software can be enhanced and customised to suit the needs of the individual library. Another advantage to FOLIO is that this advanced system allows for more flexibility in working from any space that has internet access. There are no longer restrictions for the cataloguers to work in a confined office space. FOLIO can be accessed virtually anywhere if there is internet access. There is still much work to do on FOLIO to make it the best open-source library system, but together with developers, librarians' communities, and other interested groups, the system will soon be a unique and sought-after ILS platform.

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<sup>3</sup> <https://wiki.folio.org>

<sup>4</sup> <https://app.slack.com>

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