



leeds metropolitan university

Institution Name: **Leeds Metropolitan University**

Originating Department: **Learning Support Services**

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Objectives of the Radio Frequency Identification (RFID) project:

Leeds Metropolitan University is a large, post-92 University with over 42,000 students, the majority of whom are part-time. It operates on 3 campuses: 2 in Leeds (Civic Quarter and Headingley) and 1 in Harrogate. It has an expanding network of partner colleges through its Regional University Network with a potential student body of over 100,000.

Learning Support Services (LSS) delivers converged library, information and student IT services at each campus with over 1.5 million visits per year and a similar number of circulation transactions. The Leeds campus libraries operate 24 hour opening during semesters using contracted security staff for access outside standard opening hours and with the potential to expand this to 24 x 365 from the 2007/08 academic year there is an increasing need to provide a wider range of unmediated services to students. Prior to the implementation of RFID our 8 self service machines (4 at Civic Quarter and 4 at Headingley, using electromagnetic [EM] technology) accounted for between 65 - 72% of circulation transactions. They had limited functionality with regard to non-book media, were not available within our short loan, high demand collections, were cumbersome and slow to use and lacked the 'look and feel' of innovative technology the University needs to support and deliver services that meet the high, and rising, customer expectations associated with Charter Mark accredited library services.

We believed that implementing RFID technology would strategically enhance our self services and at the same time would provide us with staffing efficiencies to develop new services. Importantly, we wanted to free up staff time to deliver a range of value-added help, information and student support services at point-of-need rather than being counter-bound serving long queues of students. RFID technology presented us with the opportunity to do this as well as enabling us to deliver state-of-the-art technology which puts our services at the leading edge of the sector.

The project was aligned with key University strategic aims and objectives to:

- Make the whole student experience the centre-piece of university life, prioritising the adding of value to students' lifelong learning
- Be visible and recognised, with the Leeds Met rose widely known as a symbol of engaging and stretching students and communities, with our own learning environments transformed into great settings for education and with our students' successes and our university reputation as front-runners increasingly appreciated externally.

### Description of the RFID Project

RFID uses radio frequency to identify each item through a tag which has data entered on it. The tag is also used for security purposes, replacing the EM 'tattle' tape which was used in the libraries previously and triggered alarms when unauthorized books were taken out of the library. These remain the detection device for the journals and reference stock. The tags are 'read' at the self service machines in the same way as earlier self services 'read' the barcode in each item, the benefit being that the RFID tags can contain much more data which can then be manipulated in a number of ways to manage stock more effectively. Its unique selling point as far as its benefits to students is the fast and efficient way it deals with circulation transactions, allowing multiple items to be 'read' in a single transaction.

After a successful University Investment Appraisal and European Union tendering process we chose D-Tech Direct as our RFID supplier. This choice was based on their ability to deliver a range of technology solutions including some unique to Leeds Met:

- Excellent, intuitive interface with a range of attractive, customer-focused features
- Stacking facility enabling multi-item transactions for materials in all formats
- Interoperability and integration with our library management system (Sirsi Unicorn) - ours is the first Unicorn implementation in the UK
- Fast, efficient printing of receipts customisable for local/global messages through an easy-to-use remote admin tool
- High level of security for a/v items with tags for a range of different media
- Pioneering, hybrid 'Intelligent' security gates which combine RFID and EM technologies using gate tracking software to identify items which activate the different alarms
- Ability of the supplier to develop their products to meet local needs delivering implementation in only 16 weeks (357,000 items tagged)

The project team included both library and computing support staff to ensure compatibility and interoperability with other university IT systems and identify future technical support requirements. As an early adopter of RFID technology, particularly of such a large scale single implementation, the team visited a number of sites to identify process changes, new methods of working and revised positioning for the new self service units. We reviewed our workflow processes to ensure the new machines could work to full capacity, for example changing the ways in which we sort returned items so it is faster for the customer (customers previously sorted their returns between standard and exceptions – they now return all items together and staff sort before reshelving)

Our project plan included:

- weekly tagging targets identifying, monitoring and adjusting the resource needed for completion within our existing staffing resource and timescales
- utilising the wireless network in the Libraries to enable us to tag at the shelves (rather than taking the stock to conversion stations) - significantly speeding up the tagging process
- university staff rollout and training
- student rollout and training

We went live at 13.00 on Saturday 16 September, a day and a half before the new students arrived on campus! This demonstrates not only how large the project was but also the commitment of staff in meeting targets and deadlines.

Student feedback has been very positive and early concerns that we may not have sufficient machines (we purchased 3 for each of the main collections at Civic Quarter and Headingley instead of replicating the 4 we had previously had) were shortlived. Our queuing times (or lack of them) are impressive – between 5 and 20 seconds at the returns machine and between 10 seconds and 2.5 minutes at the issue/renewal machines. These times were recorded during the autumn term when users were new to the system, demonstrating just how fast the throughput of items is. In many cases the technology operates much faster than the students!

We judge the main benefits to be:

- Faster throughput for all circulation functions through multi-item transactions
- Expansion of self service to include our short loan collections
- Enhanced, multi-functional self service machines enabling circulation of all media types including videos, CDs and DVDs as well as books
- State-of-the art, 'sexy', touch screen technology which is intuitive to use
- Hybrid security system which protects existing 'tagged' items (journals and reference material) and provides enhanced security for lending stock
- Potential for future stock exploitation systems using a 'handheld' stock management device

#### Future developments

Having realized the benefits to students through enhanced self services our next development is in working with D-Tech to beta test a new version of their handheld device to exploit and manage library stock more effectively. This will give us the potential to integrate library stock into a single sequence (making it easier for students to find materials), satisfy reservation lists more quickly, identify out-of-place items and those wrongly labelled and/or catalogued and use a variety of management reports to weed stock. Of these activities finding 'lost' material which is shelved out of sequence has the potential to greatly increase student satisfaction with our services: most RFID suppliers estimate that between 1% and 12% of library resources fall into this category – for Leeds Met these figures would represent the cost of recovered items at between £77,000 and £930,000.

We are also implementing self-payment systems and will be piloting a project for customers to collect their own reservations. Both these initiatives are aimed at enabling our students to become self-sufficient in their use of self services throughout our opening hours whereas currently some services are restricted to staffed service times. Further on the horizon is the potential to move to a new RFID staff/student card using MiFare which is emerging as the de facto RFID standard.

#### Return on investment

Currently the return on our investment of c£250,000 has demonstrated:

- increased student satisfaction – intuitive technology with faster, more efficient machines offering multi-functional, multi-item transactions
- reduced queuing for circulation transactions
- space optimization (working with the retail model of 'space is £s') – the new self service layouts improve functionality, accessibility, workflows and footfall
- cost savings associated with staff time released for other student support activities (c£70,000 p.a.)

- hybrid security system (RFID/EM) producing cost savings in retaining security of reference materials by utilizing existing EM security strips
- improved working environments (smarter, cleaner, faster, more modern) for staff and students – simple step process which means less need for customer training
- improved functionality for each self issue space with the capability of configuring functionality according to need, e.g. at the end of semesters when students return all loans. This increased flexibility ensures a good return on the original investment
- broadening the service offer to meet student needs during 24 x 7 opening – meets high expectations set by their experience of retail environments
- fewer physical and emotional barriers created by counter services using DDA compliant furnishings to provide increased independence for disabled students
- the sale of our old self service machines to another university and negotiating phased payments for the new equipment over 2 years
- working with book suppliers to prepare our shelf ready materials using RFID technology for processing prior to delivery
- further future efficiencies by exploiting existing resources more effectively using the handheld stock management device, as outlined above.

### Feedback

The ease of use and intuitiveness of the interface of the new self service machines means we have not needed to produce any user documentation. Feedback from students includes the following:

- ***Amazing! Well impressed***
- ***I can't believe how quick it is - this will really speed things up for me***
- ***Very 21<sup>st</sup> century!***
- ***Wow! It's like magic and like, so, clever. Cool***
- ***I didn't actually need you to show me – I thought it would be more complicated than this.***
- ***Is that it? That is so easy!***
- ***Best thing the library has done in ages - much better than the machines you had before.***

### Sharing best practice

Since implementation we have given talks and demonstrations and hosted a number of visits for colleagues across the information sector including the Universities of South Africa, Sussex, Leeds and Central England, Leeds Library & Information Service and Leeds Met colleagues at the University's fortnight-long Staff Development Festival. We are writing up our experiences for the professional press (CILIP Update) and have supported our suppliers at trade fairs and conferences. We are very happy to share our shortcuts and implementation plan, and whilst these may be different for each institution, we greatly value the opportunities this has given us for being able to network with a wide range of colleagues and learn from them at the same time.

### Summary

We are very proud of what we have achieved in Leeds Met Libraries through the implementation of RFID technology to streamline and improve our self service provision. Not only do customers love the improvements it has brought, but it has also enabled us to use staff time previously spent on serving students at the counter to support students more effectively in finding and using library resources.

## **Appendices:**

- Appendix 1      Names/contact details of staff involved
- Appendix 2      Photos of RFID installation, Civic Quarter and Headingley Libraries

## **Appendix 1**

Names of Staff involved (including job titles and email addresses):

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### **Support of Institution UCISA Representative**

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