

**IMPERIAL**

# Library Data Journey

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Library Services

Imperial College London

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# Data Journey



Forming the Data Analytics Group



Data Gathering



Creation of Library Data Directory



Success Indicator Workshop



Develop Workshop Outcomes



Creation of the Data Dashboard

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## Who we are

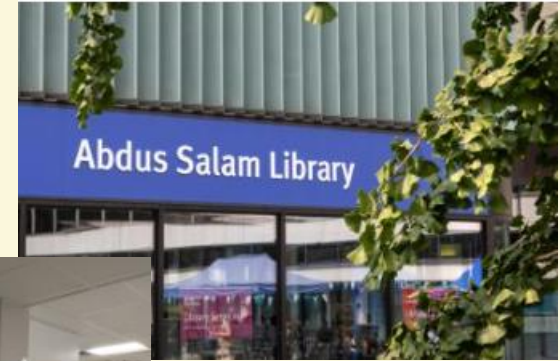
Imperial College London Library Services has 110 staff and comprises libraries across 7 campuses

Abdus Salam Library is the largest and is located at the South Kensington Campus

Five medical libraries across London

Silwood Park library near Ascot

Also curate additional study spaces at the South Kensington campus



## Background and Drivers

Library Services had a lot of data, stored in different places, with different access rights, duplication of data recording

We needed a central location for the data we were collating

We needed consistency in reporting, de-duplication and ease of access

The transition at Imperial from Oracle to Power BI



## Background and Drivers

One of the drivers for establishing the Library Data Analytics Group was the transition at Imperial from Oracle to Power BI

In 2021 the university began to move all Imperial College Analytics (ICA) Business Intelligence reporting to Power BI to create a single point of access

Power BI was, at the time, the market leader in analytics, and regarded as more user friendly and easier to access than the previous, primarily Oracle, reporting layer

With guidance from the Imperial's Information Insight Team, the Library Data Analytics Group were tasked with porting the Oracle 'Research Outcomes' Analytics to Power BI as part of this wider project

## Library Data Analytics Group

Formed the Library Data Analytics Group about 18 months ago

The group comprises 18 staff from across Library Services

Representatives across all library teams

Some are members of the group because of their job role but membership was open to anyone who was interested in data analytics and wanted to get involved

The group is co-chaired by the Head of Library Administration and Operations (Nova Larch) and the Library Systems Developer (Simon Mackenzie)

## Library Data Analytics Group: Our purpose

To act as a centre for expertise through which our library analytics and visualisations can be harnessed and optimised in order to monitor usage and trends, to support actionable insights and to inform future planning and strategy

To take into consideration developments in AI throughout all aspects of the data analytics projects, training and recommendations

To create dashboards of agreed data for the purpose of ongoing transparency



## Library Data Analytics Group: Our purpose

To gather, analyse and present data to develop an understanding of trends in library usage (both resources and footfall) and assess value for money for key library investments

To provide a forum to support the development of data analytics capability amongst relevant staff

To improve and promote analytics skills across Library Services, including running training sessions for library staff

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# Data Gathering Exercise

Started by compiling a list of what data each library team were keeping

Huge task, involved group members working with their teams to identify what data was being collected and reported on

Identified over 50 different reports and spreadsheets, with some duplication

Saved in different formats within different teams

The Library Data Analytics Group also started to compile a list of the data colleagues wanted to have access to, but currently did not.



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# Library Data Directory

Collated the information from the data gathering exercise

Created an Excel spreadsheet of:

- what the data is
- who owns the data
- where it is stored
- why we need the information

Enabled us to start identifying relevant data reports and data duplication

# Library Data Directory

	A	B	C	D	E	F
1	What the data is (e.g. occupancy data)	Where it is stored (e.g. Alma)	Who owns it	Who has access	Why do we store it	How do we connect to it
2	Fulfilment	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
3	Borrowing requests	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
4	Digital Inventory	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
5	Digital usage	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
6	Physical items	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
7	Licenses	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
8	Purchase requests	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
9	Titles	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
10	Usage data	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
11	Users	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
12	Primo Discovery	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
13	Requests	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
14	Leganto student usage	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
15	Leganto instructor usage	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
16	Course reserves	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
17	E-inventory	Alma	Library/ ExLibris	Library Staff	Core function	API , Oracle
18	Document delivery request data	Alma	Library/ExLibris	Library Staff	Core function	API , Oracle
19	Leganto list publication data	Excel in Leganto	Library/ ExLibris	Library Staff	to track Leganto engagement	Excel, Oracle
20	Digitised articles & book chapters: bibliographic information and usage data	Digital Content Store	Library/ CLA	DCS administrators	Legal reporting and acquisitions decisions	Excel, API
21	Gate statistics	Sentry Juno	Library	Library staff	Core function	Juno on dedicated PCs

# Library Data Directory

	A	B	C	D	E	F
1	What the data is (e.g. occupancy data)	Where it is stored (e.g. Alma)	Who owns it	Who has access	Why do we store it	How do we connect to it
22	Entry data from Lanel system	Lanel	Security	Security	Reporting to partner trusts and Health Education England	Request data from ID card office
23	Vacancy applicants	Excel	Library/Admin	Admin Staff - R. Newton, N. Jensen, N. Larch	To assess effectiveness of advertising, compare internal v. external applicants, replies to killer questions, comparison between posts	Excel
24	SCONUL Annual submissions	Power BI	Library/SCONUL	Library Staff	Performance comparison, strategic planning	Teams - SCONUL Reporting - Power BI
25	Web analytics	Google analytics	Digital Comms	Everyone in College	Analysing web page usage	<a href="https://www.imperial.ac.uk/staff/tools-and-reference/web-guide/tools/analytics-dashboards/">https://www.imperial.ac.uk/staff/tools-and-reference/web-guide/tools/analytics-dashboards/</a>
26	Social media analytics	Twitter/Instagram	Library	Social Media Group	Analyse social media impact	Through social media accounts
27	Key cupboard data	Excel	Library	Library Facilities and Attendants	To record staff key allocation and unique key numbers	Excel file on I:
28	Library User Headcount data	Excel	Library	Library Facilities and Attendants/ Medicine Team	To record Library Users and Group Study Room use	Excel file on I: also Medicine stats on Medicine sharepoint library.
29	Library reception area temperature records	Excel	Library	Library/Estates - Data is sent to estates every two weeks	To monitor temperature in an area where there have been past problems	Excel file on I:

## Next steps

Initially slightly overwhelming in terms of what our next steps should be once we had gathered this information because there was so much data being collected

We needed to decide which metrics and data we should prioritise

To help focus our thinking and decision making, we worked with an Imperial business analyst to deliver a workshop to the Library Data Analytics Group and the Library Leadership Team





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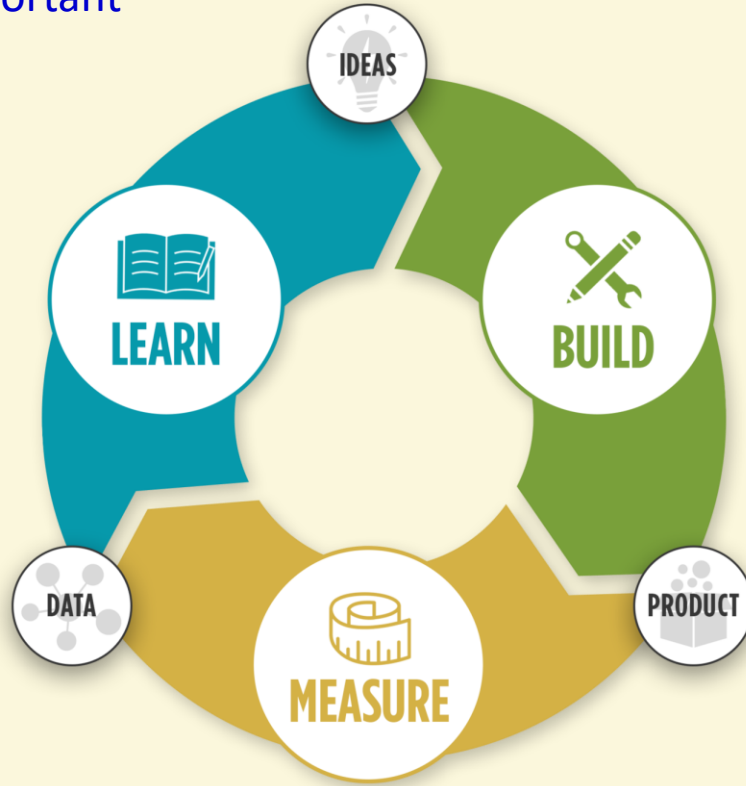
Creation of the Data Dashboard

## Success Indicator Workshop Aims

Enable workshop delegates to understand what Success Indicators are and how data can be used to measure them

Help the group think about why they are measuring and what they want to find out from the data

## Why is measurement important



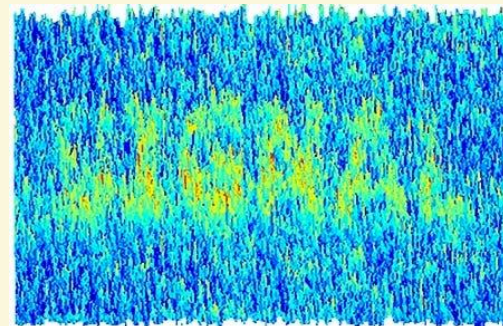
## How does measurement go wrong?

We are led by data and end up measuring the wrong things, which then skews our objectives

We measure too much and never achieve focus

We get overwhelmed by activity and fail to pay attention to impact

We are apprehensive about data being used against us and suppress, ignore or manipulate it



## Three steps to focused Success Indicators (SIs)

<b>1. Strategic objectives</b>	What impact do we want to have on learners, teachers, staff and society? What specifically makes our approach unique?
<b>2. Core activities</b>	What product, service, initiative, intervention or project will we deploy to achieve our objective?
<b>3. Success Indicators</b>	If the activity has the intended impact, how would that look? What would be measurably* different?

*\*SIs do not have to be definitively measurable right now, but they should be measurable in principle*

# Examples of Success Indicators

Strategic Objective	Core Activity	Success Indicators	Metrics
<b>Increase social learning and community in our courses</b>	<p>New email reminders to update specific forums</p> <p>Better forum instructions</p>	<p>Increased usage of forum</p> <p>Learners report better community experience</p> <p>Forum users have better outcomes</p>	<p>Click through rate on reminder emails</p> <p>Post rate in forums &amp; correlation to pass rate</p> <p>Average rating of forum in learner survey</p>
<b>Increase retention through scaffolding of good revision practice</b>	<p>Calendar with pre-populated revision dates</p> <p>More optional revision quizzes with additional questions</p>	<p>Learners engage in more optional formative assessment</p> <p>Calendar users demonstrate increased mastery of content and have better outcomes</p> <p>Learners take good practice forward when they leave imperial</p>	<p>Number of attempted assessments per user</p> <p>Correlation between revision and summative assessment grades</p> <p>Click through rate on post-course 'how to create your own revision calendar'</p>

## How Success Indicators (SIs) can (and cannot) be used



SIs are designed to tell us how effective our activities are in achieving strategic objectives



For this reason, SIs cannot be used to evaluate the performance of individuals (students or staff), they simply have not been designed to measure this



SIs are blameless - if an activity is seen to 'fail' learnings should be taken to improve or revise that activity, this cannot happen when there is a culture of blame

## Workshop key points

Emphasis was not on whether the Success Indicator was measurable

Focus was on the real-life outcomes we wanted our service or initiative to have, and how it is distinct from what has come before. The question of whether this can be physically measured would come later

The gaps in metrics are just as important to capture: this provides evidence of where knowledge gaps are and reminds us not to allow objectives to be skewed by what is currently measurable



## Workshop key points

Important message was to not try to capture everything

Working with the six Library Services strategic priorities, each group focused on one

We thought about the top three to four core activities taken to meet each priority, using the Library Services key deliverables that already exist to assist

Finally, we focused on at most three potential Success Indicators per core activity

At the end of the workshop we had a series of Success Indicators and potential metrics

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# Workshop Outcomes

Objective	Core Activity/Action	Success indicators	Metrics
We will ensure that our physical spaces are inspiring and remain appropriately located and relevant.	Working with Imperial College Healthcare Trust to plan the new space at St. Marys.	High levels of satisfaction with new space from both NHS staff and College students and staff.	NSS, UX work,
	UX project with White City students (current and future) to define exactly what they need at the campus.	Defined requirements for study space and library provision that meets the needs of all the potential users at White City.	Sentry, HubStar, book locker, support requests, book requests
	Review our library and learning spaces to determine whether they are effective and meet user needs.	Through the UX project we raised awareness with students and staff about library services.	UX project

# Workshop Outcomes

Objective	Core Activity/Action	Success indicators	Metrics
We will develop our people by creating an enabling culture and we will embrace innovative ways of working.	We will improve data literacy through training and guidance of staff.	Staff report feeling more confident. Better outcomes from student training	Post training surveys
	We will review our recruitment process to ensure they afford opportunities to a diverse candidate pool.	A more diverse pool of applicants at every stage of the process.	Applicant data from <u>TalentLink</u> via HR Systems
		Improved completion rates for applications	Applicant data from <u>TalentLink</u> via HR Systems
	Review Job descriptions to ensure requirements really are essential.	We are attracting applicants who previously would have been excluded due to unnecessary essential criteria.	Data via <u>TalentLink</u> (HR Systems)

# Workshop Outcomes



The outcomes of the workshops were compiled and taken to the next Library Data Analytics Group meeting



Review the SIs, for those that are relevant. We determined which could be reasonably related with existing metrics



Identified existing data sets and data gaps. Developed a list of priorities.



Started to develop the dashboard and reports to ensure that those metrics are clearly accessible and understood to stakeholders



Future step will be to review how data gaps can feed into future data collection initiatives (surveys, new tools and systems etc.)

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# Library Data Dashboard

Developed a Power BI dashboard

Expected to go live in December 2024

First iteration of the dashboard will include the priority data we identified during the workshop and subsequent review of the outcomes

Dashboard will be accessible to library staff and accessed via our Library Staff Hub

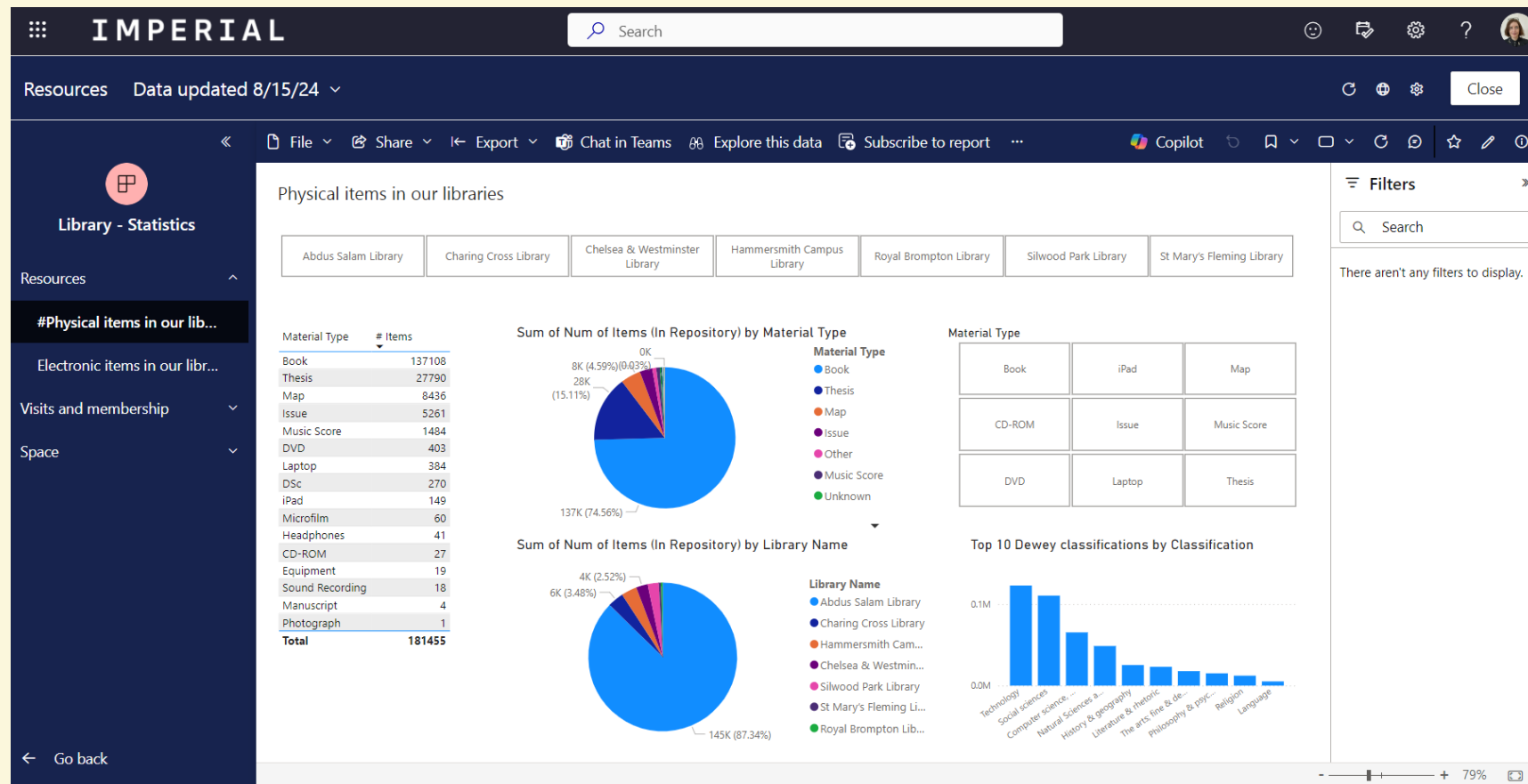
# Library Data Dashboard

The data reports in the Power BI library data dashboard are in three main categories:

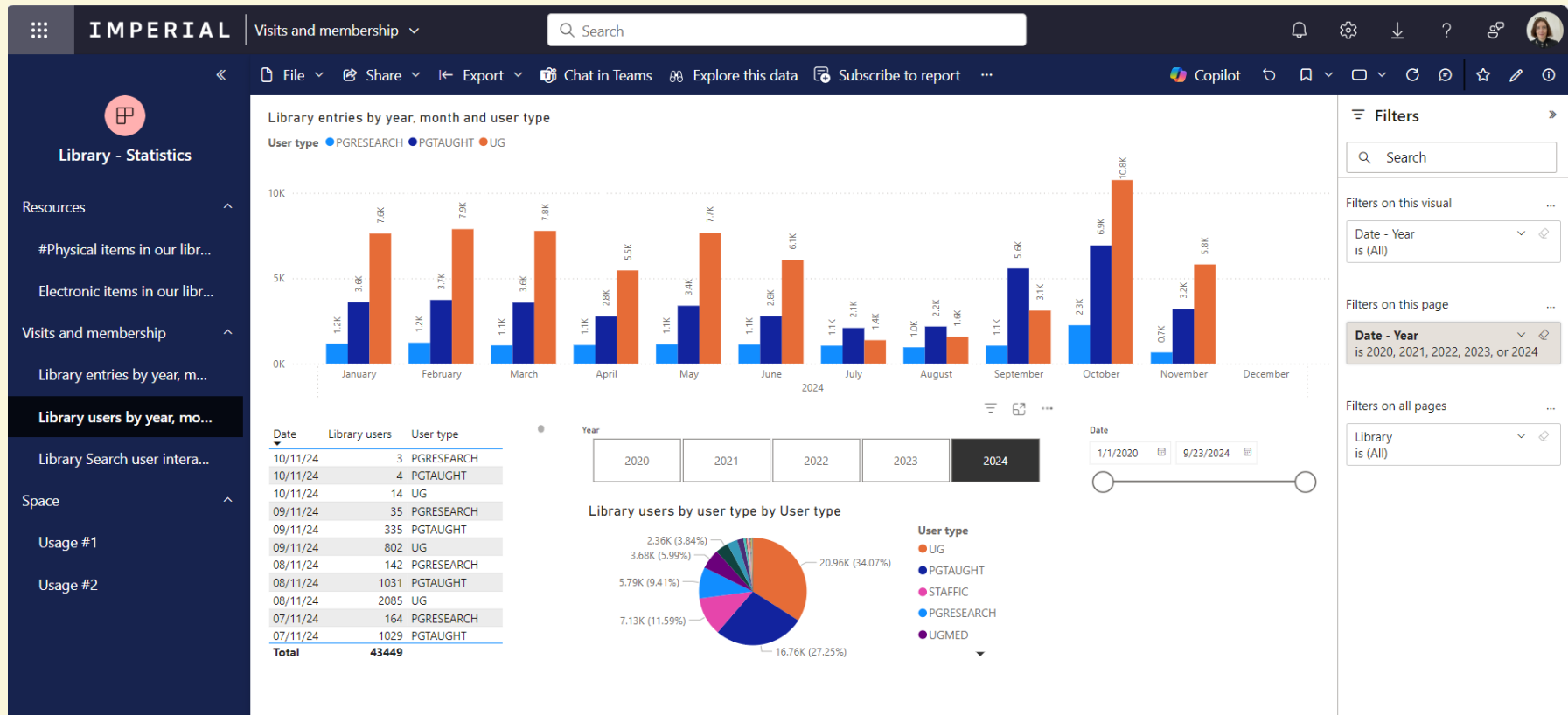
1. Resources - physical items, online resources, usage statistics
2. Visits and membership - entry gate statistics, how many alumni sign up
3. Space - how many seats and computers we have



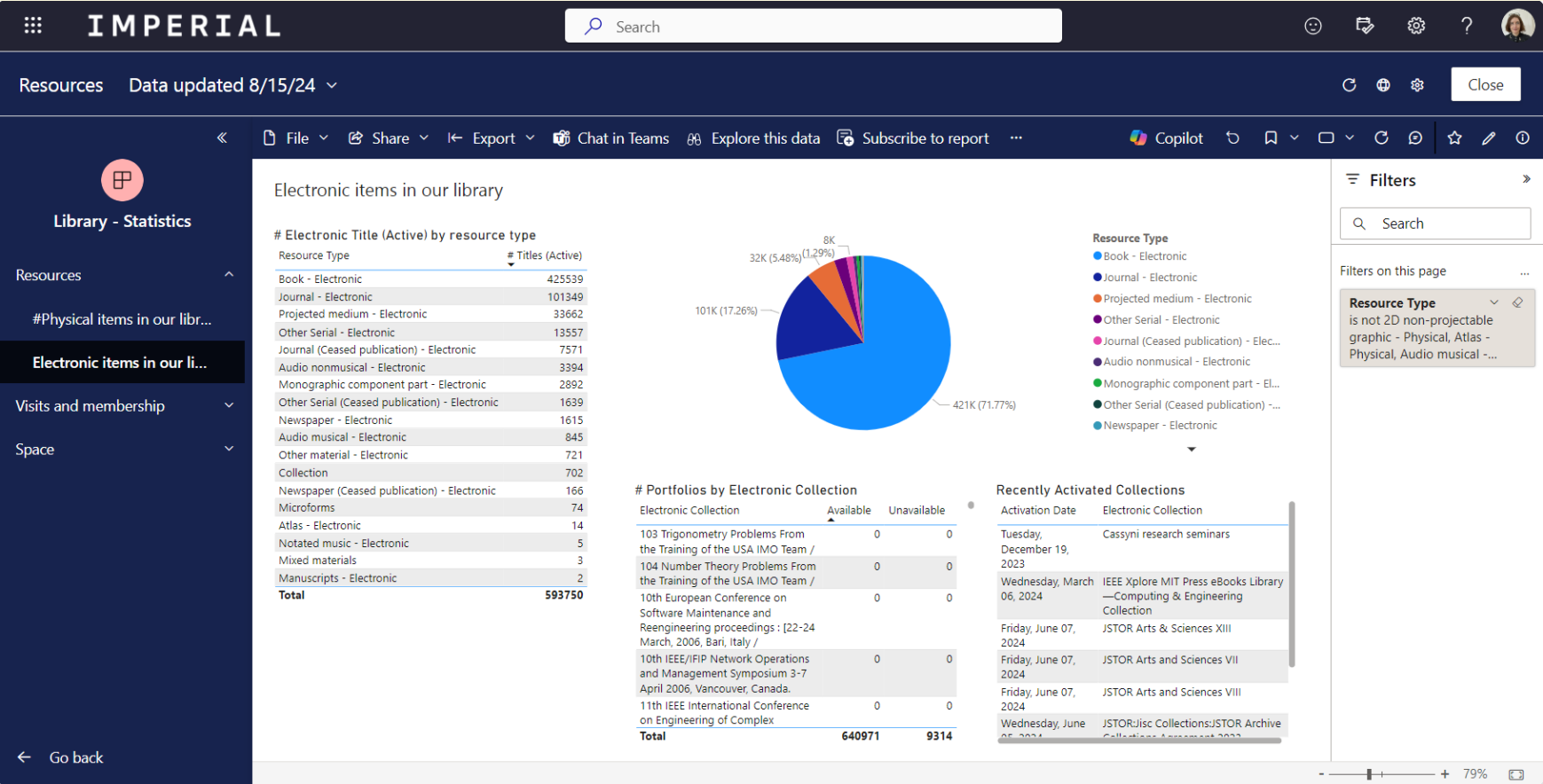
# Library Data Dashboard



# Library Data Dashboard



# Library Data Dashboard



## Data Sources

Data for the Library dashboard comes from multiple sources:

The Library Management System (ALMA (ExLibris)) provides data on Resources, Fulfilment and Acquisitions alongside data on our discovery layer (Primo) and Reading List usage (Leganto) which share the same platform.

Exlibris analytics data is provided via Oracle Business Intelligence. Individual OBI reports are exported into Power BI via an API or via the scheduled reporting features of the LMS.

## Data Sources

Data for the Library dashboard comes from multiple sources:

Space utilisation data - library gate logs (JUNO), Security door swipes, WIFI antenna connections (Hubstar).

Access to Hubstar has been discontinued and we plan to add in data from spreadsheets of manual headcounts.

Outreach and teaching engagement - Microsoft Bookings, Leganto (LMS), Blackboard

Research output data - research information management system (Symplectic) and the university repository (DSpace)

# Centralising our data reports


Library Services has created a page on our Library Staff Hub of all the data reports currently available for access

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SharePoint

Search this site

🔍 🗨️ ⚙️ ?



Library Staff 🗨️

Private group

Home

Conversations

Documents

Notebook

Pages

Site contents

Recycle bin

Edit

+ New ▾

🗨️ Promote

⚙️ Page details

📖 Immersive reader

📊 Analytics

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✎ Edit

Analytics, reporting, and dashboards

This page lists analytic reporting and dashboards created by different departments in the Library Services.

^ Reports overview

The table below shows the brief overview of all Power BI reports run by Library Services. For more details, please see the respective report title under the table.

Report name	Brief description	Responsible team	Audience
<a href="#">Geographic Bias Tool (Power BI version)</a> <a href="#">Geographic Bias Tool (Streamlit version)</a>	Aiming to present data on the diversity of countries and country income level of journal article authors cited on Imperial reading lists.	Scholarly Communications Management	Internal ( <a href="#">Power BI version</a> ) External ( <a href="#">Streamlit version</a> )
	Presenting usage statistics for reports		

# Challenges

Staff capacity and resources

Sufficient staff skilled in data analytics and Power BI development

Losing the expertise of the business analyst

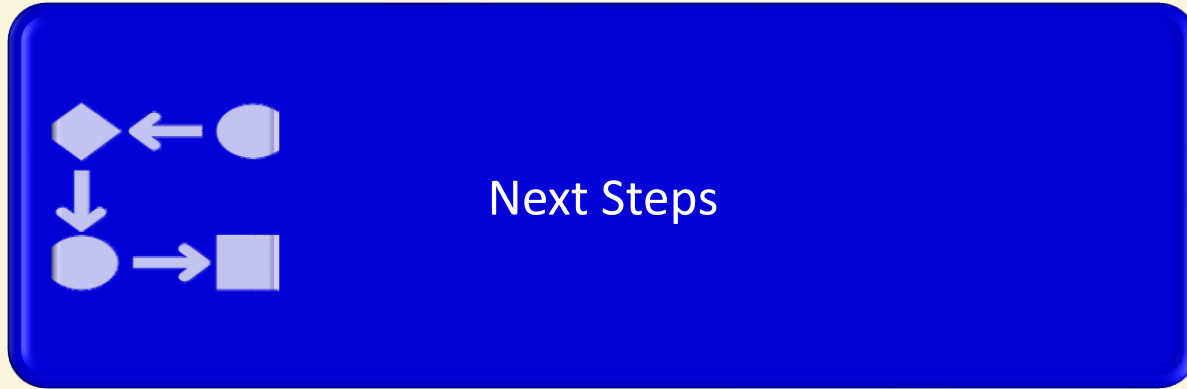
# Benefits

Having the opportunity to review our data needs.  
Better understanding of our data requirements and being clear why we need it

The Library Data Directory provided a central information point

From December 2024, the Library Data Dashboard will provide easy access for staff to obtain the most accurate data quickly

# Data Journey





## Future Actions

There is a planned phase 2 for the dashboard, to include additional reports

We will create an external facing dashboard incorporating some of the reports available in the internal dashboard

We will create a separate teaching and learning dashboard

We will work with our Content Strategy Group on data requirements that will be relevant for current developments in that area

Importantly, we will continue up-skilling the Library Data Analytics team so that more of the team can be involved in the Power BI development work

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Questions

Thank you