



QMI annual report

Outcome requested:	Finance and Investment Committee is asked to consider the QMI annual report for 2023/24.
Executive Summary:	<p>QMI's strategic goals are to deliver the <i>Queen Mary Strategy 2030</i> ambitions for the commercialisation of research. The <i>Strategy 2030</i> aims to embed a culture at Queen Mary where impact, innovation and engagement are an innate part of all research activity, to maximize its positive impact and to enhance our global reputation. Specifically, the aim is to become a UK leader in the measurable impact of licences and spinouts from our research community.</p> <p>This report highlights the in-year commercial outputs relating to the performance of Queen Mary's spinout portfolio, licensing of technology to industry and development of the innovation pipeline to maximise long-term success.</p> <p>The highlight of key outputs for the year are:</p> <ul style="list-style-type: none"> • Research commercialisation KPIs would rank Queen Mary's 2023/24 performance predominately in 8th/9th position out of 17 when compared to the 2022/23 performance of other HEIs within KEF's Cluster V across a number of benchmarking criteria. • 4 new spinouts established: IoNa Therapeutics Limited (incorporating inorganic nitrate in dietary foods); Nilocas Limited (medical device for sensing blood flow affected by coronary artery stenosis); Syntex Limited (novel synthetic tissues for biomedical applications) and WaveShaperAI Inc (audio effects). • A portfolio of 28 active spinout companies with Queen Mary's aggregated shareholdings valued at £4 million at the year end. • £146k raised from the disposal of shares in spinouts (2022/23 £341k). • 20 new commercial agreements in the year (2022/23: 24). • £2m of licence income received (2022/23: £1.9m). • 127 new invention disclosures recorded and evaluated (2022/23: 93).
QMUL Strategy: strategic aim reference and sub-strategies [e.g., SA1.1]	Research and Innovation
Internal/External regulatory/statutory reference points:	Strategy 2030 UKRI

Strategic Risks:	Research Income Research Quality
Equality Impact Assessment:	N/A
Subject to prior and onward consideration by:	None
Confidential under FOIA/DPA paper	No
Timing:	Annual report to the Committee
Author:	Dr Phil Clare, QMI CEO
Date:	25/02/2025
Senior Management/External Sponsor	Professor Andrew Livingston, Vice-Principal (Research and Innovation)



Queen Mary Innovation Limited Annual Research Commercialisation Report 2023/24

1. CEO's Statement

2023/24 represent the first full year that I have been in post and I'm pleased to see how the team has grown to work across all parts of Queen Mary, is making progress with improving the funding environment for its spinouts, and has become more active in communicating its successes within Queen Mary and to the external world. QMI is in a good shape to meet the growing ambitions of Queen Mary and I look forward to continued progression.

Highlights during the year include:

- More events held to increase engagement with academic staff.
- 6 spinouts have benefited from the internal Investment Fund, an important source of early funding, during the year.
- Progress has been made with other HEIs to create external funding (eg London Social Ventures and London Discovery Enterprises).
- Revision of the Board of Directors to include an external Chair and Non-Executive Directors, as well as ensuring representation from the whole of the University academic base.
- Increased public coverage of Queen Mary Innovation and a rising profile.
- Supporting Queen Mary in improving the internal innovation ecosystem by working closely with the new Associate Director of Entrepreneurship and updating policies – new IP and Commercialisation & Benefit Sharing policies have been developed, and now, agreed, by Senate..

The highlight of key outputs for the year are:

- Research commercialisation KPIs would rank Queen Mary's 2023/24 performance predominately in 8th/9th position out of 17 when compared to the 2022/23 performance of other HEIs within KEF's Cluster V across a number of benchmarking criteria.
- 4 new spinouts established: IoNa Therapeutics Limited (incorporating inorganic nitrate in dietary foods); Nilocas Limited (medical device for sensing blood flow affected by coronary artery stenosis); Syntex Limited (novel synthetic tissues for biomedical applications) and WaveShaperAI Inc (audio effects).
- A portfolio of 28 active spinout companies with Queen Mary's aggregated shareholdings valued at £4 million at the year end.
- £146k raised from the disposal of shares in spinouts (2022/23 £341k).
- 20 new commercial agreements in the year (2022/23: 24).
- £2m of licence income received (2022/23: £1.9m).
- 127 new invention disclosures recorded and evaluated (2022/23: 93).

2. Introduction

QMI's strategic goals are to deliver the *Queen Mary Strategy 2030* ambitions for the commercialisation of research. The *Strategy 2030* aims to embed a culture at Queen Mary where impact, innovation and engagement are an innate part of all research activity, to maximize its positive impact and to enhance our global reputation. Specifically, the aim is to become a UK leader in the measurable impact of licences and spinouts from our research community.

This report highlights the in-year commercial outputs relating to the performance of Queen Mary's spinout portfolio, licensing of technology to industry and development of the innovation pipeline to maximise long-term success.

Performance was benchmarked against a fixed set of UK HEIs that are within Queen Mary's direct peer group ("Cluster V") under the Knowledge Exchange Framework (KEF). HEIs in Cluster V are large, high research intensive and broad-discipline HEIs undertaking significant amounts of world-leading research in clinical medicine and STEM. The comparative data used is obtained from the most recent HE-Business and Community Interactions (HE-BCI) survey available (2022/23) against which Queen Mary's relative performance can be benchmarked. To guide the benchmarking, Queen Mary's research income for 2023/24 would rank 11th within Cluster V based on Research Grants and Contracts reported in the respective HEI's 2022/23 financial statements.

2.1. Creating new Queen Mary Spinout Companies

Approach

QMI works closely with academic spinout founders, managing the spinout process from early invention discovery, evaluation, development, validation, business planning, financing and formation of the company. QMI seeks investment from venture capitalist, individuals and other funding bodies.

Performance

Spinouts created	2019/20	2020/21	2021/22	2022/23	2023/24
Target	1	2	2	2	3
Actual	2	3	4	4	4

Four new spinout companies were established in the year. The creation of spinouts is more labour intensive than licensing but the increasing demand for spinouts has necessitated a stronger focus on venture building by QMI.

IoNa Therapeutics Limited, formed by Professor Amrita Ahluwalia (The William Harvey Research Institute), incorporating inorganic nitrate in dietary foods.

Nilocas Limited, formed by Professor Steve Greenwald (Blizard Institute), medical device for sensing blood flow affected by coronary artery stenosis.

Syntex Limited, formed by Dr Roberto Volpe (School of Engineering and Materials Science), novel synthetic tissues for biomedical applications.

WaveShaperAI Inc, formed by Professor Joshua Reiss (School of Electronic Engineering and Computer Science), audio effects.

Benchmarking

The following table set out the number of new spinouts created in 2022/23 for Cluster V HEIs and new spinouts created by Queen Mary in 2023/24. Our performance would rank joint 9th against the benchmarking data available for 2022/23 (previous year's ranking was joint 8th).

Rank	HEI	No. of new spin outs
1	The University of Oxford	16
2	Imperial College of Science, Technology and Medicine	11
3	The University of Liverpool	7
4	Newcastle University	7
5	University College London	6
6	The University of Manchester	6
7	The University of Cambridge	5
8	The University of Leeds	5
9	Queen Mary University of London	4
10	University of Nottingham	4
11	The University of Bristol	3
12	The University of Birmingham	2
13	The University of Warwick	2
14	King's College London	2
15	The University of Sheffield	2
16	The University of Southampton	0
17	London Business School	0

Queen Mary's ranking dropped by one place, this is primary due to the number of spinouts created by other HEIs returned to previous levels following a low in 2021/22. QMI will continue to use external experts and the internal investment fund to facilitate the creation of around 4 spinouts a year.

2.2. Queen Mary Spinout Portfolio Management

Approach

QMI supports Queen Mary spinout companies by representing its shareholder interests on the boards of spinouts. After a spinout company has been formed, it is standard practice to appoint a QMI executive as a non-executive director who will remain involved during the early development of the spinout and update the QMI Board as necessary. QMI's involvement in the spinout usually diminishes after they receive Series A investment and/or Queen Mary's shareholding is diluted below 10%.

Performance

Spinout portfolio	2019/20	2020/21	2021/22	2022/23	2023/24
Actual	18	22	26	24	28
Spinout proceeds	2019/20	2020/21	2021/22	2022/23	2023/24
Actual (£'000)	-	1,007	764	341	146

The spinout portfolio at the end of 2023/24 consisted of 28 active companies with Queen Mary's aggregated shareholdings valued at ~£4 million (PY: ~£3.4m). During the year Queen Mary spinouts raised £36m of investment and provides market validation of quality of Queen Mary's spinout portfolio.

Whilst the number of spinouts in the portfolio is not in itself an indication of quality or guaranteed downstream capital returns, a larger and more mature portfolio would provide Queen Mary with a greater chance of spinout successes over the long term. Queen Mary's portfolio is smaller and less mature than comparators and QMI is actively looking to grow the number of spinouts it creates and, in order to generate impact and returns to Queen Mary, it is focused on both on spinouts that have the most potential for high-growth and scalability, and on companies with a high potential for impact, even though they may not have significant financial returns. Our current efforts to develop a pipeline of social ventures reflect this approach.

The opportunities to realise value in non-listed Queen Mary spinout are limited, with a trade sale of the company's entire shareholding for cash the most likely route of exit. QMI has more control over the shares held in AIM-listed spinouts and will look to continue the sell-down of these shares to provide an annual return to Queen Mary and support more entrepreneurial activity.

Benchmarking

The following table illustrate the returns to HEIs from the sale of shares in spinout companies in 2022/23.

Rank	HEI	Sale of shares in spin-offs (£' 000)
1	The University of Cambridge	9,989
2	The University of Oxford	8,562
3	The University of Southampton	6,764
4	Imperial College of Science, Technology and Medicine	3,780
5	University College London	2,074
6	The University of Bristol	688
7	The University of Birmingham	571
8	Queen Mary University of London	146
9	The University of Manchester	34
10	The University of Liverpool	0
11	Newcastle University	0
12	The University of Leeds	0
13	University of Nottingham	0
14	The University of Warwick	0
15	King's College London	0
16	The University of Sheffield	0
17	London Business School	0

Fewer HEIs in this cluster realised value from their spinout portfolio during 2022/23 and the total value of share sales reduced by half, illustrating the non-recurring nature of spinout proceeds. QMI will continue to make an effort to realise value in its listed investment annually and register a ranking position in this metric.

2.3. Technology Licensing

Approach

The most common route to commercialise IP is through licensing of IP rights to companies. This route of commercialisation requires effort to present the readiness of IP to potential licensees but is less resource-intensive than creating spinouts and has a higher probability of technologies getting to market by leveraging the existing business expertise and development and distribution channels of the partnering licensee. QMI utilises various industry channels and existing contacts to find partners seeking business solutions and opportunities offered by Queen Mary technologies. It should be noted that a general move away from licensing to venture creation is being observed across the technology

transfer sector, in the UK and abroad, and QMI are planning to ensure our skills and efforts reflect this. Nevertheless, we have a strong portfolio of licences and wish to maintain this level of activity.

Performance

Licensing performance is measured against (1) the number of new commercial IP agreements executed in the year and (2) the total licencing income received in the year:

New agreements	2019/20	2020/21	2021/22	2022/23	2023/24
Target	35	35	29	28	28
Actual	27	28	29	24	20
Licencing income	2019/20	2020/21	2021/22	2022/23	2023/24
Target (£'000)	670	930	977	1,130	1,778
Actual (£'000)	975	1,262	2,084	1,911	1,998

20 new commercial IP agreements were signed in the year, a fall from 24 in the previous year. The vacancies within the team in prior years contributed to a lag in the development of projects and this affected the number the agreements signed during the year. It is expected that the number of new agreements will return to those recorded a few years previous. Licence income of £1.9m was similar to the previous year and largely driven by royalty payments.

QMI endeavours to obtain a meaningful signature payment from licensees, however given the early nature of Queen Mary IP this is not always possible. Increased licence income in the near term will therefore come from mature licences, which have delivered milestone payments and are producing regular recurring royalties, rather than by signing new licences in year.

At present around 90% of Queen Mary's IP agreements are at the pre-milestone stage, with ~10% generate royalties. It is hoped that in time the licensed technology will progress and more licenses will start generating royalties. QMI monitors the progression of Queen Mary's IP and in cases where it feels that the licensee hasn't satisfactory progressed the development of the IP, it terminated the licence with them.

With the revision of the Commercialisation and Benefit Sharing Policy and the adoption of the USIT guides, QMI will introduce more royalty bearing licences to spinouts, in which we are now generally taking a lower share of equity. Licences will be carefully designed not to damage the growth prospects of the companies in the early stages, and this approach will not be suitable for all spinouts.

Myriad Genetics Inc (early-stage pancreatic cancer diagnostic) delivers large consistent royalties and Dragonfly Technology Solution Limited (consumer predictive AI software) continues to make good progress to increase sales and thereby increase the royalties paid to Queen Mary. The royalties received from these licences will underpin IP income in the near team.

Benchmarking

Data isn't available on the annual licences signed so the following tables shows the total number of agreements for each HEI instead.

Rank	HEI	Total No. of Agreements
1	The University of Cambridge	15,854
2	The University of Oxford	4,775
3	University College London	2,558
4	The University of Southampton	1,375
5	The University of Leeds	877
6	The University of Manchester	601
7	The University of Sheffield	438
8	The University of Birmingham	283
9	University of Nottingham	270
10	Imperial College of Science, Technology and Medicine	261
11	The University of Bristol	233
12	Newcastle University	195
13	The University of Warwick	163
14	Queen Mary University of London	157
15	The University of Liverpool	89
16	King's College London	59
17	London Business School	0

Rank	HEI	IP licence income
1	The University of Oxford	75,382
2	The University of Sheffield	55,472
3	The University of Cambridge	15,785
4	University College London	7,941
5	The University of Liverpool	4,858
6	Imperial College of Science, Technology and Medicine	3,932
7	The University of Manchester	3,307
8	The University of Southampton	2,413
9	Queen Mary University of London	1,998
10	King's College London	1,688
11	University of Nottingham	1,386
12	Newcastle University	1,348
13	The University of Birmingham	1,001
14	The University of Leeds	642
15	The University of Bristol	504
16	The University of Warwick	349
17	London Business School	72

The HE-BCI reported metric for licence numbers is the total number of active IP commercialisation agreements in the portfolio. Queen Mary's ranking is similar to the previous year but the value of this benchmarking is limited due to the validity of the high values reported for this metric by some HEI and what they may reflect e.g. high volume non-exclusive licensing of teaching materials or apps; consequently, these tables may not reflect the true scale of commercialisation of research innovations within these HEIs.

Queen Mary's income from licencing has remained consistent but it's ranking has dropped one place. A raise in this ranking can only be driven by a growth in royalties rather than signature/milestone payment. At present there are no indicators of exponential growth that would see Queen Mary's ranking change. QMI will continue to find the most suitable partners for Queen Mary IP to improve the likelihood of the technology delivering future recurring royalty payments.

2.4. Building the IP Pipeline

Approach

Effective identification and management of new innovations across the breadth of Queen Mary's research base is important to ensure there is depth as well as quality in Queen Mary's IP pipeline that will drive a long-term increase in new licences and spinout companies. In order to ensure a strong pipeline of commercial opportunities, QMI seeks out commercially promising ideas from across Queen Mary's research base. New inventions arising from research are identified and registered within QMI as an *invention disclosure*. QMI evaluates each invention disclosure, and those with the best chance of commercial success are progressed.

Performance

New Disclosures	2019/20	2020/21	2021/22	2022/23	2023/24
Target	110	104	104	104	115
Actual	116	116	71	93	127

A good pipeline remains essential for future commercial successes. 2023/24 saw an increase in numbers, following a couple of years of fewer disclosures. This improvement can be attributed to staff vacancies in previous years being filled, and increasing internal communications and events.

Sources of internal funding, such as the Impact Fund, continues to be an important way to engage with new academics and support early stage commercialisation. It supports them with funding to advance the commercialisation process and demonstrate the wider impact of their work. The team continues to identify different ways to engage individuals that have not connected with QMI previously.

Benchmarking

Rank	HEI	Number of disclosures
1	The University of Oxford	331
2	The University of Cambridge	245
3	Imperial College of Science, Technology and Medicine	226
4	University College London	181
5	The University of Birmingham	173
6	The University of Manchester	140
7	Queen Mary University of London	127
8	The University of Bristol	105
9	University of Nottingham	91
10	King's College London	83
11	The University of Southampton	78
12	The University of Leeds	70
13	The University of Sheffield	61
14	The University of Liverpool	53
15	The University of Warwick	49
16	Newcastle University	45
17	London Business School	0

Queen Mary improved its ranking in this benchmark following a return to a full team and increased outreach. Further improvement in this ranking is limited as QMI's focus will continue to be on the quality of new disclosures, their evaluation and long-term engagements with research teams, rather than seeking growth for its own sake.