



Annual Research Commercialisation Report 2019/20

Outcome requested:	FIC is asked to note the Commercialisation report 2019/20
Executive Summary:	<ol style="list-style-type: none"> 1. In line with targets: 2 new spinouts established (Keratify Limited and Arbitrator Intelligence Inc) 2. A portfolio of 18 active spinout companies with QMUL's aggregated shareholdings valued at over £4 million 3. 2 early stage QMUL spinout companies secured a combined £0.7 million of investment. 4. 27 new commercial agreements in the year slightly up from the previous year (25). Total active licence portfolio of 129 agreements 5. £976k licence income received slightly up from the previous year (£771k) 6. 116 new research innovations recorded and evaluated, up nearly 20% from previous year (94) 7. COVID-19 caused little disruption to QMI's performance during the year. Academic interaction increased during the first lockdown and commercial engagement for licensing and spinout investment remained good.
QMUL Strategy: strategic aim reference and sub-strategies [e.g., SA1.1]	Research and Innovation
Strategic Risks:	Research Income Research Quality
Subject to prior and onward consideration by:	Director of Research, Enterprise and Partnerships, VP Research and Innovation, Senior Executive Team
Confidential paper under FOIA/DPA	No
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1. Executive Summary

- In line with targets: 2 new spinouts established (Keratify Limited and Arbitrator Intelligence Inc)
- A portfolio of 18 active spinout companies with QMUL's aggregated shareholdings valued at over £4 million
- 2 early stage QMUL spinout companies secured a combined £0.7 million of investment. The achievements in 2020/21 exceed this 5-fold, showing the unpredictable nature of investments for early stage research.
- 27 new commercial agreements in the year slightly up from the previous year (25). Total active licence portfolio of 129 agreements
- £976k licence income received slightly up from the previous year (£771k)
- 116 new research innovations recorded and evaluated, up nearly 20% from previous year (94)
- COVID-19 caused little disruption to QMI's performance during the year. Academic interaction increased during the first lockdown and commercial engagement for licensing and spinout investment remained good.

2. Introduction

QMI's strategic goals are dictated by 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 impact in order to enhance our global reputation."

This report highlights the in-year commercial outputs relating to the performance of QMUL's spinout portfolio, licensing of technology to industry and development of the innovation pipeline to sustain and grow the portfolio.

There has been an impact of Covid in relation to our ability to benchmark our performance against others, with statutory data returns being requested at least 6 sometimes 9 months after their usual deadlines.

The comparative data used is obtained from the most recent HE-Business and Community Interactions (HE-BCI) survey available (2018/19) against which QMUL's relative performance can be benchmarked.

The following table set out the number of new spinouts created in 2018/19 for English Russell Group HEIs.

Rank	University	No. of new spin outs
1	The University of Oxford	19
2	University College London	11
3	The University of Cambridge	10
4	Newcastle University	7
5	The University of Manchester	5
6	The University of Warwick	4
7	Imperial College of Science, Technology and Medicine	3
8	The University of Bristol	3
9	University of Nottingham	3
10	Queen Mary University of London	2
11	The University of Birmingham	2

12	The University of Leeds	2
13	King's College London	1
14	The University of Sheffield	1
15	The University of Southampton	1
16	The University of Liverpool	0
17	London Business School	0

2.1. Creating new QMUL Spinout Companies

Spinouts created	2015/16	2016/17	2017/18	2018/19	2019/20
Target	1	3	1	1	1
Actual	1	3	1	2	2

Two new spinout companies were established in the year. The creation of spinout is more labour intensive than licensing and targeting 2 to 3 spinouts a year aligns with currently available resources. The two new spin outs are:

Keratify Limited, founded by Dr Rosalind Hannen (Blizard Institute) and has developed a new human skin testing technology that has advantages over established approaches. The global R&D markets being pursued include cosmetics, medical aesthetic device and dermatology therapeutics.

Arbitrator Intelligence Inc was set up by Catherine Rogers (Centre for Commercial Law Studies) to make the selection of Arbitrators more efficient. The company uses proprietary information and data collected on Professional Arbitrators based on cases that are not in public domain to automate the selection of arbitrators than would otherwise be based on expensive primary research. New members are joining the company each month, notable new joiners include the Department for Foreign Affairs, Trade and Development, Canadian Government, and various international Arbiters trade bodies and is being highly quoted by the United Nations Commission on International Trade law.

2.2. QMUL Spinout Portfolio Management

QMI supports spinout companies by representing its shareholder interests on the boards of spinouts. QMI's involvement in the spinout usually diminishes after they receive Series investment and QMUL's shareholding is diluted.

Spinout portfolio	2015/16	2016/17	2017/18	2018/19	2019/20
Actual	11	13	14	16	18
Spinout proceeds	2015/16	2016/17	2017/18	2018/19	2019/20
Actual (£'000)	-	-	-	263	-

The spinout portfolio at the end of 2019/20 consisted of 18 companies with QMUL's aggregated shareholdings valued at over £4 million.

Significant activities in the portfolio during 2019/20 include:

Open Orphan plc (formally hVIVO). In December 2019 hVIVO merged with Open Orphan plc, with hVIVO shareholders received 2.47 new Open Orphan shares for every hVIVO share (a 34% premium). The newly merged company raised over £15m of investment. The new hVIVO team anticipate new business after acquiring the clinical trials unit during the merger and we have been active in brokering conversations between hVIVO, QM Academics and various members of the Vaccine Task Force during Covid to see what further opportunities we can leave. So far, no new

business has emerged through this route but we keep trying. QMUL shareholding was valued at £654k at year end.

Actual Experience plc. QMUL’s other AIM-listed company, Actual Experience plc, continued its slow growth. Revenues remains low and is derived from a handful of customers. The company raised £10m of investment in early 2021 to strengthen its balance sheet and fund growth. At year end QMUL’s shareholding in Actual Experience was valued at £2.3 million.

Chromosol Limited. The company raised £500k of seed investment to commercialise a new technology in the emerging field of silicon photonics.

Keratify Limited. Achieved £150k of investment from individual investors, along with an Innovate UK award of £463k. Early stages as a spin out.

2.3. Technology Licensing

By volume most of QMI’s work is through licensing of IP rights to companies. This strategy is less resource-intensive than creating spinouts and has a higher probability of technologies getting to market by leveraging the expertise of the partnering licensee. Licensing performance is measured against (1) the number of new commercial agreements executed in the year and (2) the total license income received in the year:

License numbers	2015/16	2016/17	2017/18	2018/19	2019/20
Target	28	35	35	35	35
Actual	31	26	27	25	27
License income	2015/16	2016/17	2017/18	2018/19	2019/20
Target (£,000)	500	550	550	550	670
Actual (£,000)	542	490	594	771	975

Our strategy is to obtain meaningful signature payments from licensees, however given the early nature of QMUL IP this is not always possible. Increased license income in the near term will therefore come from mature licenses, that have delivered milestone payments and are producing regular recurring royalties, rather than by signing new licenses in year. At present around 85% of the QMUL license portfolio are at the pre-milestone stage and 10% generate royalties.

Myriad Genetics Inc (early-stage pancreatic cancer diagnostic) continued to deliver strong royalties in 2019/20, accounting for ~40% of license income and illustrates well the time lag between a license being signed and income. The royalty share agreement with Myriad was agreed in 2010, by 2014 annual royalties were £16k and from 2018 the annual royalties jumped to £400k. The next license that QMI expects to start generating major royalties is Dragonfly, a software company, which generated £13k of royalties in year.

Data isn’t available on the annual licenses signed so the following tables shows the total number of licenses for each HEI and annual license income instead.

Rank	University	Total No. of Licences
1	The University of Cambridge	7,290
2	The University of Manchester	3,359
3	The University of Oxford	3,195
4	The University of Southampton	2,163
5	University College London	491

6	The University of Sheffield	379
7	University of Nottingham	237
8	Imperial College of Science, Technology and Medicine	233
9	The University of Birmingham	188
10	King's College London	138
11	Queen Mary University of London	130
12	The University of Leeds	128
13	The University of Bristol	126
14	Newcastle University	117
15	The University of Warwick	107
16	The University of Liverpool	53
17	London Business School	0

Rank	University	IP licence income
1	The University of Oxford	56,094
2	Newcastle University	25,998
3	The University of Sheffield	17,329
4	The University of Cambridge	8,061
5	University College London	6,780
6	Imperial College of Science, Technology and Medicine	3,717
7	The University of Liverpool	2,043
8	The University of Manchester	1,832
9	King's College London	1,224
10	The University of Southampton	1,220
11	The University of Leeds	996
12	University of Nottingham	962
13	Queen Mary University of London	771
14	The University of Bristol	639
15	The University of Birmingham	279
16	The University of Warwick	248
17	London Business School	18

The value of this benchmarking is limited due to the validity of the high values reported for this metric by some HEIs 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. For example, 3 of the top 4 ranking Universities for license number would rank bottom for IP License income per license. **But we need to stay alert to our licensing approach as it relates to the Government Knowledge Exchange Framework scheme, expected to become “active” in 2022, which may link income to these metrics in future years.**

QMUL's 2019/20 license income of £975k would see a small improvement to 12th in the unlikely event that things stayed the same. The anticipated royalties from Dragonfly and continuing royalties from Myriad could see QMUL move up a couple of places further, however there are no indicators of exponential growth in royalties that would see QMUL's shoot up the ranking.

2.4. Building the IP Pipeline

New Disclosures	2015/16	2016/17	2017/18	2018/19	2019/20
Target	98	110	120	120	110
Actual	100	118	105	94	116

Rank	University	Number disclosures	of
1	The University of Oxford	367	
2	The University of Birmingham	239	
3	Imperial College of Science, Technology and Medicine	233	
4	The University of Cambridge	194	
5	The University of Manchester	156	
6	The University of Liverpool	112	
7	The University of Warwick	99	
8	Queen Mary University of London	94	
9	University of Nottingham	94	
10	King's College London	87	
11	The University of Sheffield	86	
12	University College London	84	
13	The University of Southampton	70	
14	Newcastle University	69	
15	The University of Bristol	63	
16	The University of Leeds	50	
17	London Business School	0	