31 July 2024

JUNE 2024 QUARTERLY ACTIVITY REPORT AND APPENDIX 4C – MEMPHASYS LIMITED (ASX: MEM)

Memphasys Limited (MEM or the Company) is a reproductive biotechnology company developing novel medical devices, diagnostics, and media with application to assisted reproductive technology (ART) in humans and animals. MEM's most advanced product, the Felix™ System, which is now being sold commercially in Japan, is a patented, automated device for quickly and gently separating sperm from a semen sample for use in ART procedures.

In addition, MEM is undertaking several other projects to extend its commercial product pipeline, most notably its Oxidative Stress measurement system, which is being developed by MEM in conjunction with the University of Newcastle (UoN) under the direct guidance of MEM's Scientific Director and global Andrology expert, Laurette Professor John Aitken, and Klean Gene Pty Ltd, a company established by experienced animal sector executives Michael Cameron and Rod Wellstead .

Memphasys encloses its Appendix 4C cash flow statement for the quarter ended 30 June 2024 (Q4FY24), along with the following update.

CORPORATE AND BUSINESS ACTIVITIES IN THE JUNE QUARTER (Q4FY24)

There was no change in the activities of the Company during the June quarter (**Q4FY24**). During the period, the Company continued its cost reduction initiative with management identifying further opportunities to streamline several product development and operational expenses across its suite of products.

These cost reductions are anticipated to improve overall project development efficiency, while having no effect on project timelines.

The most significant changes in the cash flow of the Company in Q4FY24 were:

- Sales revenue from order of 200 single-use Felix™ cartridges and six Felix™ consoles to clinics in Japan announced in Q3FY24[1] reflected in Appendix 4C cashflow statement for Q4FY24
- Cost reduction initiative introduced in Q3FY24 now reflected in Appendix 4C cashflow statement for Q4FY24 by way of:
    - Reduction in staff costs
    - Reduction in administration and corporate costs
    - Reduction in advertising and marketing
- Product manufacturing and operating costs increased from Q3FY24 reflecting payments in respect to the manufacture of cartridges ordered in respect to Felix testing and sales.
- Product development costs include payments to University of Newcastle, and other payments for development of cuvettes for RoXsta, regulatory consultants, and other costs in respect to carrying out the Felix™ trials.
- Payments to related parties in Q4FY24 were for salaries, fees and superannuation to directors of the Company.

FUNDING, PRODUCT DEVELOPMENT, TAX REBATE LOAN

Post quarter-end, Memphasys major shareholder, Andrew Goodall, entered into a Subscription Agreement with the Company to subscribe for 62,500,000 ordinary MEM shares at an issue price of A$0.008 per share, to raise $500,000 (before costs).[2]

In addition, Memphasys received $586,000 via a short-term loan against its 2023/24 R&D Tax Rebate, with loan funds received in late June and balance of R&D Rebate of ~$1.1M expected to be received in September 2024. The loan is

[1] Refer to ASX announcement dated 18th March 2024

[2] Refer to ASX announcement dated 29th July 2024.

secured by and repayable out of the 2024 R&D Tax Rebate and attracts a fixed 15% per annum interest rate. It matures on 30 November 2024, however, can be extended by agreement between the lender and Memphasys.

Funds received will be used to assist the Company in further developing its Felix™ System and to support Memphasys' clinical trial of the Felix™ System being conducted to support a regulatory submission with Australia's Therapeutic Goods Administration (TGA). This submission is expected to be completed by the end of the current calendar year with results analysis and regulatory submission to be filed with the TGA as soon as practical post that date.

In addition, funds will be applied to activities associated with the development of its Oxidative Stress measurement system, which is being developed by MEM in conjunction with the University of Newcastle (UoN) under the direct guidance of Memphasys's Scientific Director and global Andrology expert, Laurette Professor John Aitken, and Klean Gene Pty Ltd, a company established by experienced animal sector executives Michael Cameron and Rod Wellstead.

As well as the 62.5m shares subscribed for under the Agreement, 31,250,000 unquoted MEM Options (ex-price $0.011, ex-date 2 years from date of issue) have been issued to a party nominated by Mr Goodall.

Mr Goodall is a former Director of MEM, and a significant shareholder and long-term supporter of the Company, and following the issues shares under the Agreement holds 288,714,397 shares in MEM, which represents ~ 19.98% of the Company's issued capital.

APPOINTMENT OF FULL-TIME CHIEF EXECUTIVE OFFICER

During the quarter, MEM announced Acting Chief Executive Officer and Executive Director Dr David Ali was appointed to the position of Chief Executive Officer on a permanent full-time basis, effective 1st July 2024.[3]

Dr Ali remains an Executive Director. Dr Ali is a highly qualified senior executive with more than 40 years' experience in medical management, business development, sales and marketing for pharmaceutical, medical device and diagnostic companies in human and animal reproduction.

FELIX™ COMMERCIAL ROLL-OUT

JAPAN

Since the initial announcement of MEM entering an exclusive distribution agreement with Vitrolife Japan KK in August 2023[4], clinical interest among Japanese IVF clinics has grown significantly.

This interest is expected to increase following positive findings from a Japanese clinical trial conducted in Q4FY24 in which the Felix™ System outperformed a sperm preparation method comprising two widely used technologies, a combination of Density Gradient Centrifugation followed by SwimUp (DGC+SU). [5]

The clinical trial conducted by the Reproduction Clinic Osaka, Japan, a Key Opinion Leader and an early adopter of the technology, showed clear benefits from using the Felix™ System across most clinical measures over the alternative sperm preparation methods (See Figure 1).

The key findings from the Japanese clinical trial include:

- **Processing Time**: The Felix™ System significantly reduces the sperm processing time from approximately 1 hour to just about 7 minutes, enhancing laboratory efficiency and patient convenience.

[3] Refer to ASX announcement dated 6th June 2024
[4] Refer to ASX announcement dated 7th August 2024.
[5] Refer to ASX announcement dated 20th May 2024.

- **Blastocyst Development Rate**: The Felix™ System showed a blastocyst development rate of 58.4%, higher than the 52.9% achieved by DGC+SU. This suggests that the Felix™ System may enhance embryo development stages critical for successful implantation and pregnancy.
- **Good-Quality Blastocyst Development Rate**: The rate was 35.7% with the Felix™ System compared to 26.1% with DGC+SU, indicating a higher proportion of viable embryos for transfer, which can improve IVF success rates.
- **Embryo Utilisation Rate**: The Felix™ System demonstrated an embryo utilisation rate of 58.0%, better than the 54.3% with DGC+SU, implying a more efficient use of embryos generated during the IVF process.

These results are crucial as they suggest that the Felix™ System could potentially lead to higher success rates in ART, providing a faster, more efficient, and potentially more effective method for sperm preparation. This can translate to better outcomes for couples undergoing fertility treatments.

A paper about the trial and its findings were accepted for presentation at the European Society of Human Reproduction and Embryology (ESHRE) conference which was held in June 2024.[6]

In addition, sales revenue from the order of 200 single-use Felix™ cartridges and six Felix™ consoles to clinics in Japan announced in Q3FY24[7] was recognised in Q4FY24 and is reflected in the Appendix 4C cashflow statement attached.

Vitrolife Japan KK and Memphasys continue to advance sales activities, however it should be noted this activity will not be significantly expanded until the wider clinical trial is completed in the current calendar year and results published shortly thereafter.

Memphasys and Vitrolife Japan KK believe that currently the addressable market for the Felix™ System in Japan is 20% of the total market, as there is currently no Japanese insurance reimbursement category for the Felix™ System. Vitrolife Japan KK and Memphasys will be working to access the remaining addressable market once the current clinical trial is completed by the end of the current calendar year.

CANADA AND NEW ZEALAND

In January 2024, Memphasys announced exclusive five-year distribution agreements with Vitrolife subsidiaries in the Canadian and New Zealand markets on similar terms to the Company's agreement with Vitrolife Japan KK.[8] These markets present a strong opportunity for early commercial access to build the Felix™ brand and access key opinion leaders to legitimise the product in their landscape.

Following these agreements, the plans for training for the Felix™ have commenced in both markets representing the initial steps of the sales onboarding process. In addition, Vitrolife has visited the major clinics in New Zealand and at least one major clinic is undertaking a preliminary assessment of the Felix™ device.

Vitrolife AB and Memphasys continue to advance an expansion of sales activities, however it should be noted this activity will not be significantly expanded until the wider clinical trial is completed by the end of the current calendar year.

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[6] "A novel electrophoretic sperm isolation system achieves equivalent ICSI outcomes to the combined density gradient centrifugation and swim-up method in a shorter processing time" S Sayaka Kitahara, Shimpei Mizuta, Yuka Iwamoto, Kazutaka Doi, Yasuhiro Ohara, Hidehiko Matsubayashi, Tomomoto Ishikawa / Reproduction clinic Osaka; Hassan W. Bakos, R. John Aitken / University of Newcastle and Memphasys

[7] Refer to ASX announcement dated 18th March 2024

[8] Refer to ASX announcement dated 2nd January 2024

OTHER EARLY ACCESS JURISDICTIONS

MEM has identified and is continuing to seek distribution in other early access jurisdictions with various potential distributors, including Vitrolife AB.

REGULATORY AND QUALITY UPDATE

MEM's clinical trial in conjunction with Monash IVF Group Ltd (MVF) steadily gained further momentum during the June quarter.

As previously reported, the Company has completed the "swim-up" aspect of the trial and continued to take proactive steps to increase the participation rate for the Density Gradient Centrifugation (DGC) trial arm and to reduce the overall study timeline.

This included the addition of Monash IVF clinic (Fertility North) to the trial to accelerate patient recruitment.[9] The new site opened during the quarter with MEM now ready to commence final training for recruitment at the new site.

Based on opening of the new clinic, and if recruitment as indicated by modeling proceeds as expected, the trial is expected to be completed by the end of the current calendar year, with results analysis and regulatory submission to be filed with the TGA as soon as practical post that date. MEM continues to evaluate a range of initiatives to increase the speed of this trial.

In Japan, the Kiba Park Clinic will be joining the clinical trial and is currently submitting the study documents for ethics approval. This is expected to assist in both the overall clinical trial and the proactive activities of Memphasys and Vitrolife Japan KK in seeking a new insurance reimbursement category for the Felix™ System.

NEW PRODUCT DEVELOPMENT

APPOINTMENT OF HIGHLY EXPERIENCED ANIMAL INDUSTRY EXPERTS

During Q4FY24, MEM appointed Klean Gene Pty Ltd, a company established by experienced animal sector executives Michael Cameron and Rod Wellstead to assist the Company in evaluating commercial pathways for its animal applications.[10]

Mr Cameron, who has significant experience in implementing strategic farming practices to develop agricultural farmlands into high performing assets, is assisting with MEM CEO and Memphasys Animal Breeding Solutions Project Team to undertake evaluations of the effectiveness and commercial potential of its Oxidative Stress measurement system and other products and devices generated by the research team at the University of Newcastle.

Mr Wellstead or other sub-contractors may also be engaged from time-to-time to assist Mr Cameron in the performance of services under the agreement.

OXIDATIVE STRESS MEASUREMENT SYSTEM

Memphasys considers its Oxidative Stress measurement system will have important applications in the reproductive animal industry, as well as potentially in other industries. Oxidative stress results from low levels of antioxidant protection, which are linked to infertility in animals (and in humans) and to levels of DNA damage in both sperm and eggs.

The Oxidative Stress measurement system offers several advantages:

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[9] Refer to ASX announcement dated 20th May 2024 and 24th July 2024
[10] Refer to ASX announcement dated 30th May 2024.

- **Rapid Point-of-Care Assessment:** Oxidative Stress measurement system provides an extremely rapid assessment of antioxidant activity, with the potential of enabling immediate identification of animals requiring antioxidant supplementation and monitoring the consequences of such supplementation.
- **Wide Range of Applications:** Oxidative Stress measurement system can be used in various situations within the cattle industry, including monitoring oxidative stress in dairy and beef cattle, guiding nutritional supplementation, and optimising reproductive performance.
- **Commercial Potential:** Oxidative Stress measurement system holds substantial commercial merit due to its ability to differentiate itself in the market with unique features and applications that address significant needs in the industry.

Post-quarter end, the company announced its Oxidative Stress measurement system had been elevated as a priority given its innovative nature and its ability to offer true product differentiation.[11]

In consultation with industry, Memphasys and Klean Gene have identified the need to conduct a study to establish a baseline and thresholds for oxidative stress likely to be associated with meaningful events in reproductive performance. Determination of these events when correlated with reproductive performance could provide significant value to the animal industry.

Memphasys has developed a prototype methodology for oxidative stress measurement which will be applied to such a study. Applying its early-stage oxidative stress measurement prototype, the study design is intended to include both longitudinal and retrospective analyses to identify oxidative stress thresholds in bovines and potential correlations with productive performance.

Memphasys is currently exploring industry partnerships and defining appropriate clinical on-farm partners for data and blood collection. Once this process is complete, MEM will provide a detailed update on study progress, including partners, commencement date, and completion date.

This concludes MEM's Quarterly Activities Report for Q4FY24. The Appendix 4C cashflow report is attached.

Approved for release by the Board of Memphasys Limited

For further information, please contact:

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Memphasys Limited
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[11] Refer to ASX announcement dated 19 July 2024.

Figure 1: Results of the Japanese trial comparing DGC+SU vs. the Felix™ System

	DGC+SU	Felix™ System
Processing time	~1 hour	~7 minutes
Fertilisation rate	81.0%	80.6%
Blastocyst development rate	52.9%	58.4%
Good-quality blastocyst development rate	26.1%	35.7%
Embryo utilisation rate	54.3%	58.0%

Definition of key terms:

- **Blastocyst Development Rate**, measures the percentage of embryos that reach the blastocyst stage, a critical phase in embryo development occurring around five to six days after fertilisation.

  Reaching the blastocyst stage is significant because embryos at this stage have a higher chance of successful implantation into the uterus, leading to pregnancy and a live birth.

- **Good-Quality Blastocyst Development Rate**, indicates the percentage of embryos that not only reach the blastocyst stage but also meet specific quality criteria, suggesting they are more viable and likely to result in successful pregnancies.

  High-quality blastocysts are crucial for improving the success rates of assisted reproductive technologies (ART) like IVF. They increase the likelihood of implantation and reduce the need for multiple embryo transfers.

- **Embryo Utilisation Rate**, is the percentage of embryos that are deemed suitable for transfer or freezing after the fertilisation and development process.

  A higher embryo utilization rate implies a more efficient ART process, as it indicates that a greater proportion of embryos are viable for use in treatments, potentially leading to more successful pregnancies per cycle of IVF.

Appendix 4C

Quarterly cash flow report for entities subject to Listing Rule 4.7B

Name of entity	
Memphasys Limited	
ABN	**Quarter ended ("current quarter")**
33 120 047 556	30 June 2024

Consolidated statement of cash flows		**Current quarter $A'000**	**Year to date (12 months) $A'000**
1.	**Cash flows from operating activities**		
1.1	Receipts from customers	24	60
1.2	Payments for		
	(a) research and development	(263)	(1,296)
	(b) product manufacturing and operating costs	(165)	(256)
	(c) advertising and marketing	(2)	(40)
	(d) leased assets	(43)	(189)
	(e) staff costs	(360)	(2,351)
	(f) administration and corporate costs	(184)	(1,180)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	1	11
1.5	Interest and other costs of finance paid	-	(52)
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives	-	1,315
1.8	Other	-	5
1.9	**Net cash from / (used in) operating activities**	**(992)**	**(3,973)**

2.	**Cash flows from investing activities**		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) businesses	-	-
	(c) property, plant and equipment	-	(77)
	(d) investments	-	-
	(e) intellectual property	-	-
	(f) other non-current assets	-	-

Consolidated statement of cash flows		Current quarter $A'000	Year to date (12 months) $A'000
2.2	Proceeds from disposal of:		
	(a) entities	-	-
	(b) businesses	-	-
	(c) property, plant and equipment	5	5
	(d) investments	-	-
	(e) intellectual property	-	-
	(f) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
2.6	**Net cash from / (used in) investing activities**	**5**	**(72)**

3.	**Cash flows from financing activities**		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	150	3,721
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	(368)
3.5	Proceeds from borrowings	636	1,323
3.6	Repayment of borrowings		(1,034)
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
3.10	**Net cash from / (used in) financing activities**	**786**	**3,642**

4.	**Net increase / (decrease) in cash and cash equivalents for the period**		
4.1	Cash and cash equivalents at beginning of period	436	638
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(992)	(3,973)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	5	(72)

Consolidated statement of cash flows		Current quarter $A'000	Year to date (12 months) $A'000
4.4	Net cash from / (used in) financing activities (item 3.10 above)	786	3,642
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	**Cash and cash equivalents at end of period**	**235**	**235**

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter $A'000	Previous quarter $A'000
5.1	Bank balances	235	436
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	**Cash and cash equivalents at end of quarter (should equal item 4.6 above)**	**235**	**436**

6.	Payments to related parties of the entity and their associates	Current quarter $A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	103
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.

7.	**Financing facilities** *Note: the term "facility' includes all forms of financing arrangements available to the entity.* *Add notes as necessary for an understanding of the sources of finance available to the entity.*	**Total facility amount at quarter end $A'000**	**Amount drawn at quarter end $A'000**
7.1	Loan facilities	3,659	3,659
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	**Total financing facilities**	3,659	3,659

7.5	**Unused financing facilities available at quarter end**	-

7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.

Convertible Note ($3M) plus interest; maturity date 31 December 2024.

8.	**Estimated cash available for future operating activities**	**$A'000**
8.1	Net cash from / (used in) operating activities (item 1.9)	**(993)**
8.2	Cash and cash equivalents at quarter end (item 4.6)	**235**
8.3	Unused finance facilities available at quarter end (item 7.5)	**-**
8.4	Total available funding (item 8.2 + item 8.3)	**235**
8.5	**Estimated quarters of funding available (item 8.4 divided by item 8.1)**	**0.24**

Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.

8.6 If item 8.5 is less than 2 quarters, please provide answers to the following questions:

8.6.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: Yes. The company's net operating expenditure cashflows are expected to increase in the September quarter to pay normal and deferred operating expenses, payment to the University of Newcastle for continued product development and the expansion of the Felix Device clinical trials in Japan.

8.6.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: Yes. In July, the company has secured additional funding through a $500k equity placement with an existing major shareholder; and in the September quarter is expecting to receive the R&D tax rebate, estimated to be $532k (after repayment of a $586k short-term loan against the R&D tax rebate). It is expected that engagement with industry partners and new and existing shareholders will assist funding its operations.

8.6.3	Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?
Answer:	Yes. The business expects to be able to continue its operations and meet its business objectives on the basis of ongoing funding received to meet operational and product development activities.

Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.

Compliance statement

1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.

2 This statement gives a true and fair view of the matters disclosed.

Date: 31 July 2024

Authorised by: By the Board of Directors
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.

2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.

3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.

4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [*name of board committee – eg Audit and Risk Committee*]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".

5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.