

ASX Code: PSY

30 October 2015

## Panorama Shareholder Update Marketing and Distribution Strategy and Operational Update

Dear Shareholder,

I am pleased to provide you with an update on the progress of our Company, Panorama Synergy Limited (ASX: PSY) ("Panorama"; "Company"). We have continued to make solid progress towards the development of our LumiMEMS™ Reader, a MEMS sensor technology.

Considerable focus has been invested to develop our marketing and distribution strategy and refine our overall commercialisation strategy. With a growing global interest in MEMS technology, the Company is confident in its ability to become a leading player in the rapidly growing Sensor Market; a market estimated to be worth over \$86 billion today<sup>1</sup> and growing rapidly due to the growth of the Internet of Things (IoT).

An overview of recent accomplishments are summarised in sections below:

1. Key milestones achieved to date
2. R&D investment, intellectual property (IP) and competitive advantage
3. Marketing and distribution strategy: opportunities and activities
  - a. Current Company focus: manufacturing and 'packaging'
  - b. Overview of marketing and distribution strategy
  - c. De-risking the marketing and distribution strategy
4. Next steps and opportunities for PSY

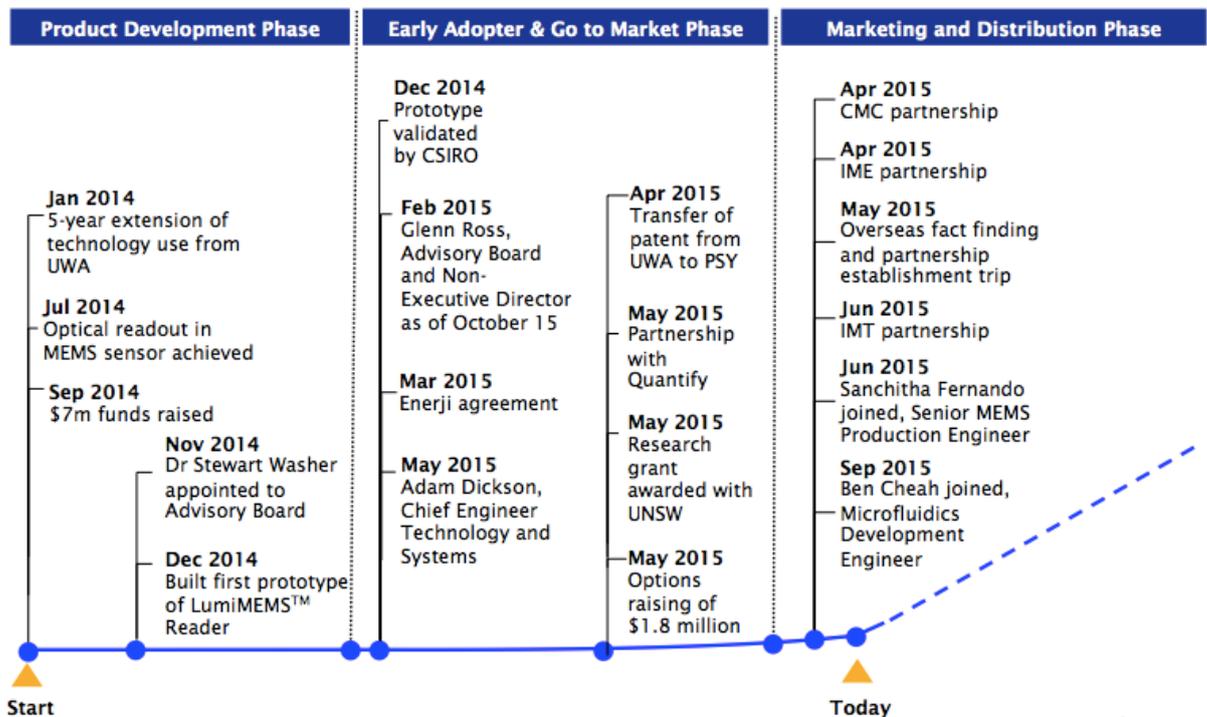
### 1. Key milestones achieved to date

Our focus on investment in technology and R&D in partnership with University of Western Australia (UWA), created the successful development and testing of its first LumiMEMS™ Reader prototype in December 2014, independently validated by CSIRO. Subsequent to this significant milestone, the Company has focussed on end-market product capabilities. A summary of the key technical and commercial milestones and achievements to date is below (Diagram 1).

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<sup>1</sup> BBC Research, *Global Markets and Technologies for Sensors*, July 2014.

**Diagram 1: Summary of key technical and commercial milestones**



## 2. R&D investment, IP and competitive advantage

We will continue to invest in R&D that support market opportunities as well as sustain our long-term competitive advantage.

Panorama has significant and proven research capabilities:

- More than a decade of research excellence in microelectronics MEMS, and other sensor technology such as infrared spectroscopy through its partnership with UWA
- Our Microelectronics Research Group (MRG) are world leaders in these fields
- Research hub located in world class microelectronic research facilities at University of Western Australia
- Experienced leadership team: leveraging strong backgrounds in technology innovation and commercialisation

The LumiMEMS™ Reader has significant competitive advantages over existing MEMS technologies:

- Provides greater sensitivity and accuracy in measurements
- Substantially smaller than existing technologies: we have created a sensor the size of a coin or smaller vs. current market size of a washing machine
- Greater robustness in harsher environments
- Less power usage
- Can be deployed with no electronics on board which could trigger explosives or other hazardous events

- Not subject to electrical interference, can be deployed in the field, taking this capability out of the “laboratory” environment with no degradation in performance. Sensing can become “real time” rather than sending samples to the lab and waiting
- Patented technology, which covers the design of the LumiMEMS™ Reader; the laser technology placement onto the same chip as the cantilever  
Superior performance across the board for similar pricing sets the LumiMEMS™ reader to become a defacto standard

### 3. Marketing and distribution strategy: opportunities and activities

The marketing and distribution phase of the Company has three key aspects. Firstly, we have assessed the product and market opportunities taking advantage of our competitive differentiators. Secondly, we have established a global leading team to execute and deliver on our strategy including recent hires:

- **Sanchitha Fernando, PhD - Senior MEMS Engineer.** Mr Fernando has been a leading MEMS engineer for over a decade and has a track record of successful R&D project management
- **Ben Cheah, Microfluidics Development Engineer.** A PhD graduate in microfluidics; the application of MEMS sensors in liquid environments. Mr Cheah’s experience opens additional opportunities in medical industry applications and other liquid environment
- **Glenn Ross, Non-Executive Director (NED).** Having worked on the advisory board since February, Glenn Ross was recently appointed to NED. With a scientific background, he has worked with multinational companies in both a technical and sales capacity. In addition, Mr Ross has extensive investment experience in both private and public companies and has prior directorship experience with an ASX listed entity
- **Phillip Wingate (Company Secretary).** Mr Wingate brings corporate, financial and capital market experience to the Company. Mr Wingate has broad ASX experience and has advised on a number of merger and acquisition and capital market transactions

All four hires join complement an already strong Board and management team, who have a wealth of corporate, entrepreneurial and technology expertise across international markets.

Thirdly, the step-by-step marketing and distribution process for the Company is phased, with each stage commencing once key objectives are achieved; minimising risk across the business.

#### a. Current Company focus: manufacturing and ‘packaging’

A key focus of CY2015 was the roll-out of the Company’s strategic plan, particularly with regards to manufacturing and packaging. PSY has embarked on the ‘fabless’ MEMS model; whereby the company is ‘fabrication-less’ and outsources manufacturing to key world leading MEMS foundries.

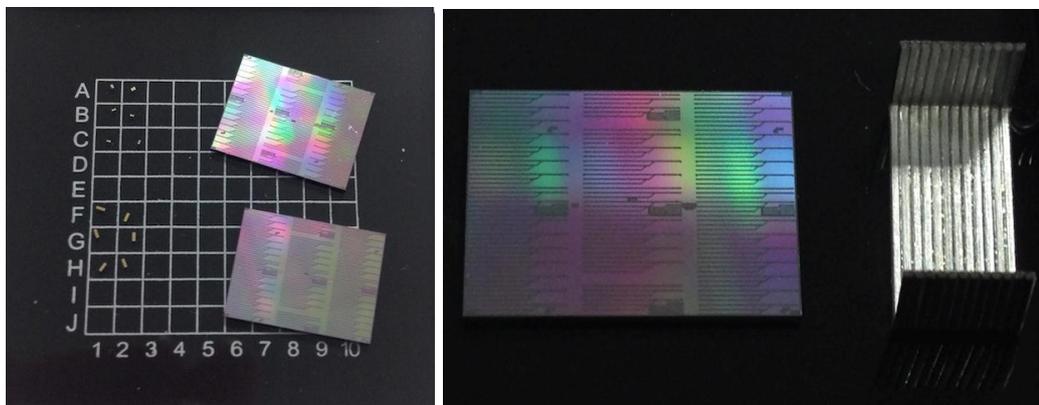
We have conducted a thorough global analysis of the large scale clean room manufacturers, known as Foundries and have entered into several key agreements with foundries that specialise in manufacturing the parts and products for creating the LumiMEMS™ Reader, including:

- **Canadian Microelectronics Technology (CMC):**
  - Based in Kingston, Canada. CMC is the global leader in designing, prototyping and manufacturing innovative solutions in microsystems and nanotechnology. Of particular interest, is their leading capabilities in photonics (technology required to generate the optical signal in and out of the LumiMEMS™ Reader chip)
- **Institute of Microelectronics (IME):**
  - Based in Singapore. IME is a subsidiary of the Science and Engineering Research Council of the Agency for Science, Technology and Research (A\*STAR); a research institute to develop strategic competencies, IP and fabrication / foundry of MEMS technology
- **Innovative Microsystems Technology (IMT):**
  - Based in California, USA. IMT is the premier MEMS foundry globally for contract manufacturing and expertise in fabricating complex MEMS solutions. IMT has a track record of quality, innovation and platforms to reduce product development cycles

**Diagram 2:** Technology Overview: video link

<http://www.panoramasynergy.com.au/irm/content/technology-overview.aspx?RID=226>

**Diagram 3:** LumiMEMS™ Reader: wafer component and relative size to office staples (right diagram)



**Diagram 4:** Foundry (or clean room mass manufacturing)



This financial year will include silicon manufacturing, photonics manufacturing and mass manufacturing testing, this stage is key for refining the production of the product. Similar to the prototype process, this step can be an iterative process, ensuring no large scale manufacturing contracts are entered into until we are certain the process is robust and reliable.

The Company purchased a small number of silicon wafers from CMC to test the manufacturing processes in small batch runs and testing. First runs at the foundries have been very solid in terms of the placing of the photonics, independently tested and verified with 100% success rate at placing and aligning the components with an accuracy tolerance of one micron. A micron is 1,000 of a millimetre. Such success at a first time implementation is unusual and very pleasing.

The next step is to achieve a successful small batch run on the MEMS structures. PSY will also pursue other manufacturing capabilities from additional foundries to ensure optimisation of this manufacturing component is achieved. The process of identifying foundries, testing and manufacturing is ongoing, sometimes different markets may need variations on a product best manufactured by a different foundry.

Concurrent to small batch manufacturing of the component technology, we are developing the 'packaging' of the thumb-sized end-market device. The 'packaging' stage of development covers the laser, laser light, electronics, filters (e.g. dust protection) and overall design of PSY's LumiMEMS™ Reader device. We are currently analysing mechanical strength, fabrication to specification and end-market design of the product. PSY is currently in negotiations with external companies to undertake assessments on:

- Design and process regarding light sourcing on the chip as well as into and out of the 4mm silicon device while keeping the integrity, safety and quality of readings
- Precise manufacturing of attaching the light source (the size of a grain of sand) onto the chip (which is a few mm across)
- Foundries to undertake batch testing and mass manufacturing on whole product manufacturing. This process will be quicker than current testing of individual parts as all technology, processes and specifications have already been completed
- Foundries to undertake mass manufacturing

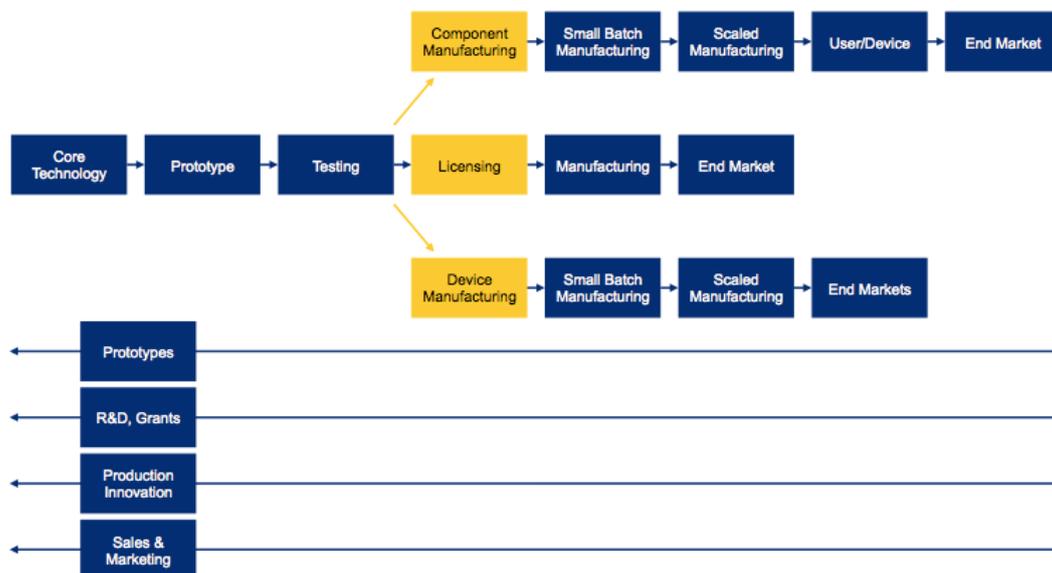
#### **b. Overview of marketing and distribution strategy**

There are three paths to market for Panorama, summarised in Diagram 5 which are:

- **Licencing:** where customers already have manufacturing capabilities
- **Component manufacturing:** to provide components for other manufacturers for use in their devices
- **Device manufacturing:** where no existing technology solutions exist

The Company will continue to develop new prototypes and explore its in house R&D, as well as potential partnerships and acquisitions for closely related or complementary technologies. Moreover, investments in sales and marketing commencing immediately will enable us to take advantage of the growing number of opportunities being presented to the Company.

Diagram 5: Stages of Marketing and Distribution Strategy



### c. De-risking the marketing and distribution strategy

We continue to minimise the risks associated with the processes as well as the marketing and distribution strategy for PSY. Part of the consideration is to ensure the best use of time, capital and success of the product. We have de-risked this process by:

- Ensuring minimal capital requirements to develop manufacturing and commercialisation of product
- Optimising the value of IP of the assets via strategic partnerships or licensing
- Internally developing stringent policies and procedures that are rigorously adhered to
- Mitigating manufacturing risk by using global leading foundries, not concentrating manufacturing with one player and also using licensing and JVs out-source manufacturing to customers
- Involving all key stakeholders early, including customers, to ensure effective product development and market entry

## 4. Next steps and opportunities for PSY

- PSY's patented technology will be supplied into the IoT high-growth market with a number of IoT product development opportunities being considered
- Already holding substantial conversations with global consumer brand names
- A growing pipeline of opportunities in both potential customers and partnerships
- Strengthening team with further industry experts, including engineering director, focussed sales and marketing and project management

- ENDS -

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## About Panorama Synergy

Panorama Synergy is a Perth-based technology company focused on the commercial and technological advancement of its sensors for Biological and Chemical detection, for enabling the Internet of Things with its unique patented advantage being optical readout system for MEMS, the LumiMEMS™ Reader. It continues to develop and explore technologies in the Sensor market.

This unique technology has been developed by the Microelectronics Research Group (MRG) team at UWA, in partnership with Panorama Synergy. MRG took the far sighted decision to be a global Centre of Excellence in MEMS over a decade ago, creating the opportunity for this breakthrough. UWA and Panorama Synergy have been partnering for much of this time.

Panorama Synergy's Board includes Aidan Montague, Chairman, whose background includes senior roles with Cisco Systems in Europe, South Africa and Asia and Terry Walsh, Managing Director, formerly MD for Cisco Australia and New Zealand, and then CEO of Cisco Canada.

**Website:** [www.panoramasynergy.com](http://www.panoramasynergy.com)

## About MEMS

MicroElectroMechanical Systems (MEMS) are microscopic, highly sensitive systems able to detect and measure chemical and biologic substances, movement and acceleration, gravity and a wide range of other applications. They represent a \$14 billion to \$20 billion industry with significant growth rates. All devices which incorporate MEMS sensors require a readout system to assess and communicate the data that is measured. The LumiMEMS™ sensor is the next evolution of that readout system, as it takes MEMS readouts from primarily being electrically based, into the world of optical. The sensor market is estimated to be \$86 billion globally, with high growth rates predicted as sensors enable the Internet of Things, expected to consume hundreds of thousands of sensors.

**MEMS Flipboard:** <https://flipboard.com/section/mems-bQUuF>