



Silex
SYSTEMS LIMITED

INVESTOR PRESENTATION

Lodge Partners Mid Cap Conference

11 April 2008

Michael Goldsworthy – CEO



Silex Systems Limited

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SILEX SYSTEMS TECHNOLOGY

OUR MATERIALS TECHNOLOGY – in summary:

Based on two sets of advanced materials

- **Isotopically engineered materials**
(Ultra-pure materials for nuclear, medical and other high-tech applications)
- **Band-gap engineered materials**
(Precision fabricated nano-scale materials for advanced semiconductor and optical performance)

Applied to two industries

- **Alternative Energy**
(Uranium Enrichment, Solar Energy, Thermoelectric Power)
- **Semiconductors/Photonics**
(Optical Silicon, Advanced Semiconductor Materials)



Nuclear Power

A Global Nuclear Power Renaissance is Underway:

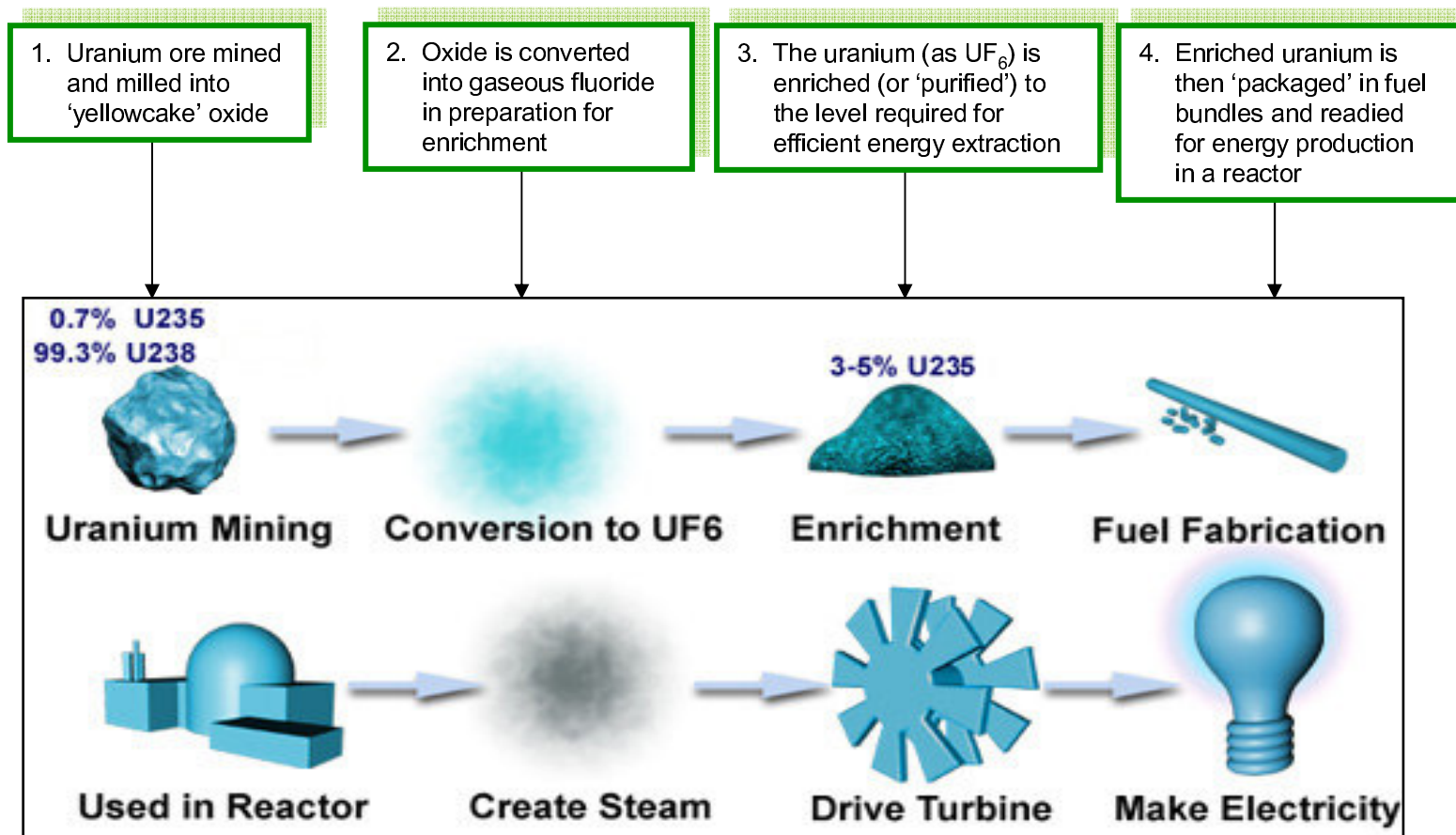
- Currently 16% of world's electricity supplied by nuclear power
- 440+ reactors currently operating (103 in the USA)
- 95+ being built / planned + accelerated development in Asia
- No greenhouse gas emissions → minimal impact on global climate
- Governments and Utilities around the world are re-assessing the nuclear power option.
- Public opinion is changing

(Data from World Nuclear Association website: www.world-nuclear.org)



SILEX Uranium Enrichment

- Four steps to make Nuclear Fuel
- Uranium Enrichment is key to Nuclear Fuel economics





SILEX v Existing Technologies

	SILEX	CENTRIFUGE	GAS DIFFUSION
DEVELOPED	2000's	1940's	1940's
PROCESS	Laser Excitation	Mechanical (‘centrifugal force’)	Mechanical (‘brute force’)
ENRICHMENT EFFICIENCY	2 to 20 ⁽¹⁾	1.3	1.004
COST COMPARISON	Potentially Attractive	Capital Intensive	Very expensive
% OF EXISTING MARKET⁽²⁾	0%	54%	33%
STATUS	Under Development 3rd Generation	Proven 2nd Generation	Obsolescent 1st Generation

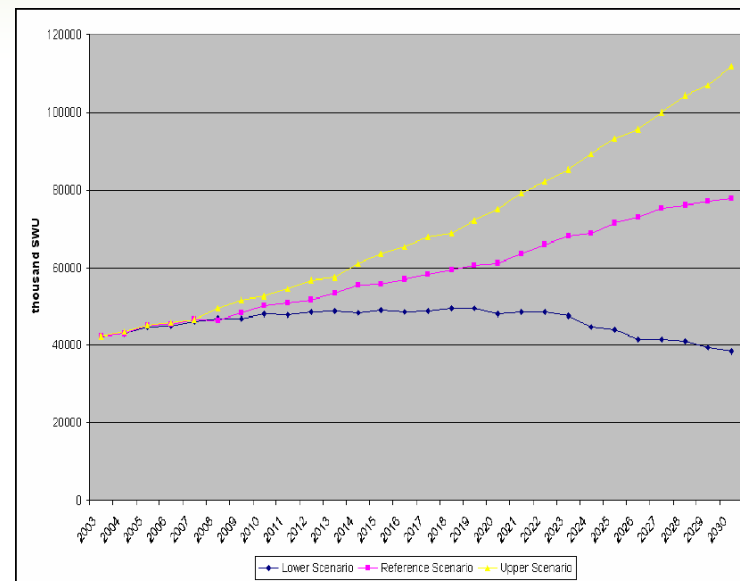
(1) This number is Classified – the range indicated is dictated by the technology Classification Guide

(2) Approximately 13% supplied via Russian HEU material



Uranium Enrichment Market Outlook

- **Supply and Demand currently in balance**
- **Enrichment Market currently >US\$6B pa.**
 - Annual production over 45 million units
- **Potential enrichment supply issues beyond 2013:**
 - HEU Agreement terminates (~13% of market)
 - US & French diffusion plants close (~33% of market)
- **Three new centrifuge plants to be built**
 - Urenco centrifuge in France (Areva) and US (NEF)
 - American Centrifuge (USEC)
- **According to WNA projections – possible supply shortage by 2015**
 - Reference case ~4 million SWU (~8%) shortfall
 - Upper case ~ 12 million SWU (~20%) shortfall
- **Ideal opportunity for deployment of new technology such as SILEX.**
- **SILEX is the only 3rd Generation laser process under development in the world.**



Note: 1) The unit of enrichment is known as the 'Separative Work Unit' (SWU)

2) HEU – Highly Enriched Uranium – is ex-weapons material blended down for use in commercial reactors

3) Data from World Nuclear Association (WNA) 2005 Nuclear Fuel Market Report



Silex Signs Commercialisation and License Agreement with General Electric Company for the SILEX Uranium Enrichment Technology

22 May 2006

US Government Authorisation

Received 3 October, 2006



The GE – SILEX Agreement

- Exclusive Worldwide Commercialisation and License Agreement for the SILEX Uranium Enrichment Technology.
- Joint Technology Development Program – funded by GE.
- Closing payment US\$20M received after US Government authorisation (October 3rd 2006).
- US\$15M upon successful completion of Test Loop demonstration.
- US\$20M upon successful completion of Lead Cascade.
- Perpetual Royalty:
 - Base Royalty of 7% of revenues from use of SILEX Technology
 - Additional Royalty of up to 5% (ie, maximum Royalty of 12%) based on total cost of deployment.



SILEX Technology Development Program

Oct 06

Test Loop
Phase Starts

**Late '08 /
early '09**

Expected
Test Loop
Completion

2012

Expected
Initial
Commercial
Cascade
Start-up

- **Phased Development Program**
 - Jointly conducted (commenced October 2006)
 - Funded by GE-Hitachi Nuclear Energy (GEH) – new partnership
 - Recently re-badged as 'Global Laser Enrichment' (GLE)
 - **Test Loop**
 - Assess the performance and economics of the SILEX Technology.
 - Being conducted at GE's nuclear facility in Wilmington NC, USA
 - Expected completion in late '08/early '09
 - **Initial Commercial Cascade**
 - Initial cascade to proceed after successful completion of Test Loop.
 - **Full-Scale Commercial 'GLE' Production Plant**
 - First production plant to follow initial cascade start-up
 - GEH targeting a capacity of 3.5 to 6 million SWU with start-up in 2012
- Preliminary Marketing of Laser Enrichment Services**
- Letters of intent signed with Exelon and Entergy Oct 2007
 - Two of the largest nuclear utilities in the US.



Test Loop Project Status:

- **Objectives of Test Loop:**
 - Confirm and optimise plant-scale design parameters
 - Demonstrate equipment reliability and process efficiency
- **Transfer of Test Loop Project to GE's Wilmington NC plant in the USA, including technology and personnel, was completed in mid-2007**
- **Current Activities:**
 - Test Loop Facility licensing activities with US Nuclear Regulatory Commission
 - Installation of facility infrastructure and services at Wilmington plant
 - Construction of Test Loop equipment and ongoing procurement activities.
 - Technical support for Test Loop laser systems development – US contractor
- **Expected completion of Test Loop Program – late '08/early '09**



Stable Isotope Project (Lucas Heights)

- Current feasibility project focus is on Oxygen-18 and Carbon-13 laser isotope separation.
- Target markets: O-18 – PET medical imaging (~US\$100M p.a.*)
C-13 – Medical diagnostics (~US\$100M p.a.*)
- Testing is well advanced with encouraging results to date
- Evaluating commercialisation / business model.
- Feasibility Project expected to be completed in mid-2008.

(*) Current market values are estimates only – derived internally from various publicly available sources. More accurate estimates are not available.



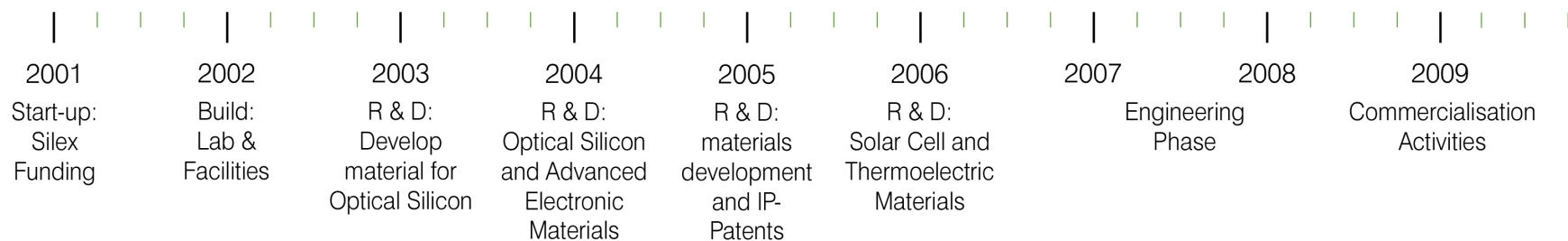
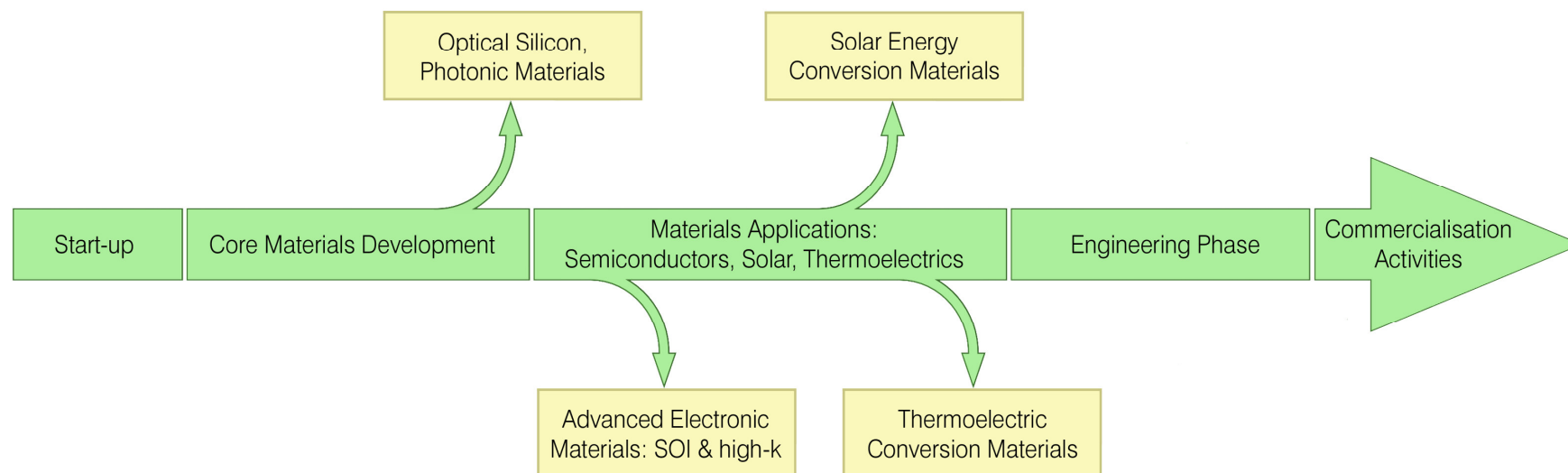
Translucent Inc – Overview



- **Founded in 2001 – Translucent is ~71% owned by Silex.**
- **Focused on advanced materials development for:**
 1. Optical Silicon / photonics applications - current focus
 - for optical communications and chip-to-chip interconnects
 2. High Efficiency Solar Energy Cells - current focus
 - for efficient carbon-free energy production
 3. Advanced semiconductor applications - future focus
 - to help sustain computer chip progress according to Moore's Law
 4. Direct Thermoelectric power technology - future focus
 - to make our energy systems more efficient (car engines, coal power plants)
- **To date – 12 Patents granted by USPTO, 27 more applications in the process**
- **R&D facility in Palo Alto, California houses materials and device fabrication capability as well as extensive analysis equipment**



Translucent Technology Evolution





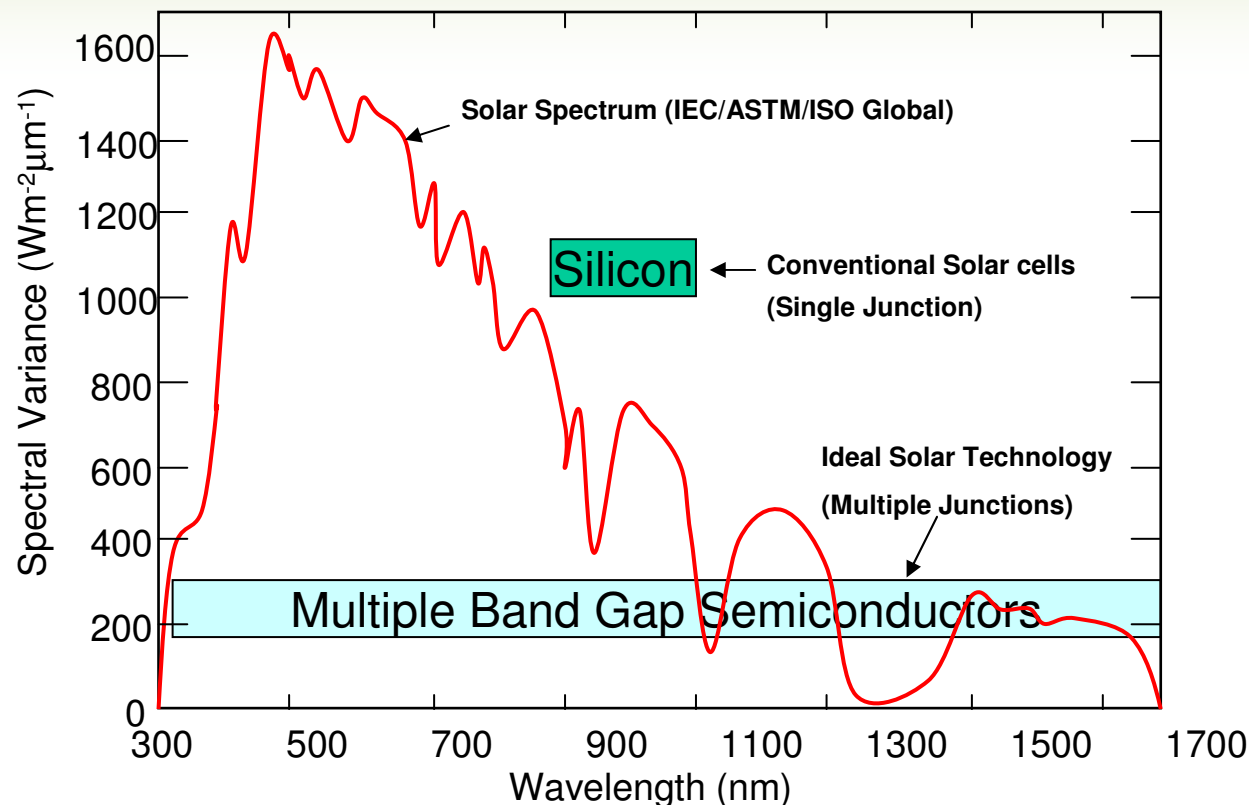
Translucent Solar Cell Project



- Aims: increase solar energy conversion efficiency & lower manufacturing costs
- Patent application for Ultra-High Efficiency Solar Energy Cell filed June 5th, '06. Three more Patent filings for Solar Cell IP since.
- Translucent's leverage – bringing new materials to the solar Industry
 - originated from the photonics / semiconductor materials
 - Increase efficiency and move away from silicon wafer substrates
- Solar today: 93% based on silicon wafer + single junction → 20% max efficiency.
7% based on thin film + single junction → 15% max efficiency.
- Solar market currently worth US\$17 billion – expected to continue to grow at >25% per year (Greentech Media 2007 PV Market Review)



SPECTRAL COMPOSITION OF SOLAR RADIATION & USEFUL SOLAR CELL OPTICAL RANGES



- Useful conventional Silicon solar cell conversion limited to a small window of solar photon energies close to the band-gap energy of silicon – single junction limitation
- Using multiple junction band-gap engineered semiconductor → conversion efficiency increased by harnessing a far greater fraction of available energy in the solar spectrum



Translucent Solar Cell Project cont'd....



- Project in development stage – subject to typical R&D risks
- Based on 'core materials technology' utilising thin active-layer semiconductor films on alternative (non-silicon) substrates.
- R&D effort at Translucent to focus on optimising the thin semiconductor films for maximum solar spectrum absorption and high efficiency conversion.
- Expecting to have sample solar cells available for industry validation mid-2008.
- If successful, plan is to build pilot line asap thereafter, and commence initial production and verify economics.



TRANSLUCENT

Optical Silicon / Photonics Project

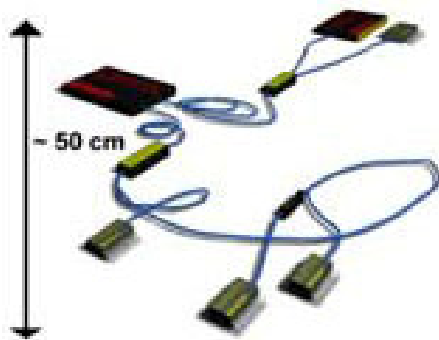
- **The Quest for 'Optical Silicon' continues..**
- **A major focus of the semiconductor industry for over 20 yrs**
- **Translucent is a leading contender**
 - Multi-billion dollar photonics market – optical (Fiber optic) communications
 - Key Issue is integration of photonics and electronics on a silicon chip
 - Specific Objectives: - a 'true' silicon laser (CMOS Fab-compatible)
 - silicon optical interconnects
 - Aim to demonstrate optical signal processing devices in late-2008.
 - If successful, aim to commercialise thereafter.
- **Key development collaborator – 'Painter Nano-Photonics Research Group' at Caltech.**



Market Positioning for Optical Silicon Development at Translucent

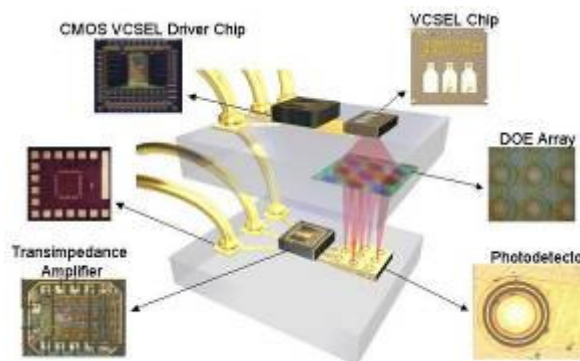


Current Optical Communications Technology



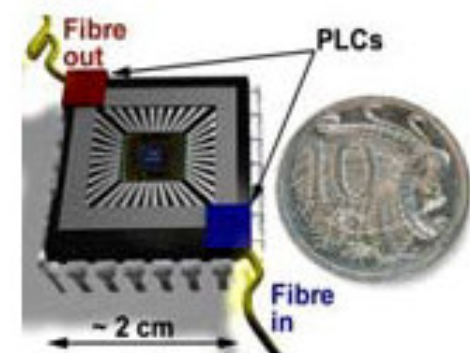
Expensive discrete components linked by optical fiber (non-silicon materials)

Example of Proposed Interim Solution



Expensive discrete components integrated on a common platform

Ultimate Objective



Fully Integrated on chip (all-silicon based materials)

Potential for significant reduction in costs!



Indicative Target Timeline*

Translucent Project Activities

1) Solar Project: Mid '08 Late '08	<ul style="list-style-type: none">• Expected industry validation of solar cell prototypes• Commence Solar Cell Pilot Line construction (subject to above validation)
2) Photonics Project: Mid '08 Late '08	<ul style="list-style-type: none">• Demonstrate optical signal processing devices in Photonics project – (ie, LED, Detector, Amplifier)• Commence commercialisation of initial photonics devices

(*) Estimate only – subject to various risk factors. May change according to project outcomes.



FIBERBYTE PTY LTD

- Adelaide based subsidiary – 90% owned by Silex.
- Core IP – “USB-inSync™” invention → 4 patent filings to date.
- USB-inSync™ transforms the ubiquitous USB connection bus into a ‘smart’, more powerful synchronous bus resulting in many new potential applications in industry.
- Developing novel instrumentation technology for
 - Data Acquisition equipment market (>\$500M p.a.)
 - Test and Measurement instrumentation market (>\$8B p.a.)
 - Timing and Frequency equipment market (>\$400M pa)
- Initial product range is ready for market – accelerated commercialisation strategy being implemented.
- Discussions ongoing with commercial entities with view to accelerating adoption of USB-inSync™ technology in these key markets.



Current Fiberbyte DAQ Products

USB DAQ ●○

- **DAQ-2500X**
4-Ch 16-bit 100kS/s



- **Maestro -GS22 / -iS22**
Timing Hubs



- **UTD -2100 series / -2200 series**
Universal Timing Devices



Sonda Series (in development)
Signal Conditioning Probes



New DAQ Devices (in development)
2/3-Ch 24-bit 5MS/s
24-bit Arb. Waveform Generator





FINANCIAL POSITION – 31/3/08

- \$50 million raised @ \$7.70 on 31/10/07 (heavily oversubscribed)
- Proceeds will be used to accelerate development of Company's technologies and commercialisation of initial products.
- Primary focus is on Translucent and Fiberbyte technologies (uranium enrichment technology fully funded by GE).
- Brings total cash reserves to ~\$67 million (current)
- Gives Silex strength in 3rd Party commercial negotiations
- Proceeds are expected to be sufficient to take the company into a cashflow positive position



Silex Summary

A unique company developing technology
and advanced materials for
the 21st Century.

ASX : SLX

WWW.SILEX.COM.AU