Thin Film Electronics ASA (“Thinfilm”):

A Smarter Everyday Powered by Printed Electronics

Bringing Intelligence To Everything

Company Presentation
January 2014
The $100bn Market Gap
Penetration of electronic intelligence in physical objects

The market gap

Bringing intelligence to everything

A Smarter Everyday

Why hasn’t this gap been addressed?

• Cost of silicon and integration
• Lack of scalability for conventional electronics

A new paradigm needed to create the

Internet of Everything

Existing market

Value potential of adding intelligence:

$100bn
(~1% of retail value)

Value of embedded electronic intelligence¹:

$315bn
(~21% of retail value)

5-10 trillion
[# disposable items sold in 2012]

80 billion
[# apparel items sold in 2012]

15 billion
[# microcontrollers sold in 2012]

2.3 billion
[# computing/mobile devices sold in 2012]

60 million
[# cars sold in 2012]

¹ Global semiconductor market (2012)
Source: IDC; Gartner; World Bank; IMF; The Semiconductor Industry Association; OICA; IC Insight; MarketLine; Apparel Market; Planet Forward
Printing electronics breaks the cost & scalability barriers

<table>
<thead>
<tr>
<th>Memory Labels</th>
<th>Sensor &amp; Display Labels</th>
<th>Near-field Smart Labels</th>
</tr>
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<tbody>
<tr>
<td>Silicon EEPROM</td>
<td>Printed Memory</td>
<td>Silicon Sensor System</td>
</tr>
<tr>
<td>6.5¢</td>
<td>2¢ - 5¢</td>
<td>$11+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Printed Sensor System</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30¢ - 50¢</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Silicon sensor systems w/ wireless communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$25+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Printed Sensor Label w/ near-field read</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50¢ - $1.00</td>
</tr>
</tbody>
</table>

Current Product: Q3 2013 Scale-up
Current Development (2014) Extend
Next Step (2016) Create
Imagine Memory Everywhere™

Printing electronics breaks the cost & scalability barriers

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Near-field communication catalyzes the Internet of Everything

“The companies changing the mobile landscape in the most profound ways”

Mobile 15 2012
Thinfilm Memory Enables the Internet of Everything

- Ubiquity
- Local Information
- Shared information

- Printed Electronics
- Smart Sensor and Display Labels
- Smart Labels Share Data with the Cloud
Commercial deals validate vision; Megatrends accelerate it

Agreements with Fortune 1000 companies

- Global leader in flexible packaging
- Work on intelligent packaging
- (~200bn packages/year)
- Top 2 global Toys & Games
- Monopoly, Trivial Pursuit & Scrabble

- Leader in identification solutions
- More than $1billion annual revenue
- Luxury good manufacturer to trace gray market activity
- Global fast-moving consumer goods company testing for brand protection. Sales > $50bn

Megatrends in action

“Internet of Everything’ is an exponential proxy for sensing, understanding and managing our world.

Dave Evans, Chief Futurist, Cisco Systems

Connected objects by 2020:
Cisco – 50 Billion; IBM – 1 Trillion

1 in 3 Mobile Phones with NFC by 2017; 300% growth in 2012

Printed Electronics $40-$50Billion market by 2020—IDTechEx

“Our agreement with Thinfilm could make printed electronics a component of every package we manufacture.”

Henry Theisen, CEO, Bemis
“Thinfilm’s announcement of high volume production is the latest validation point for the commercialization of printed electronic devices.”  **Michael Palma, IDC**

| Memory + Logic: Extensible platform for printed integrated systems; now includes only printed NFC interface supported by major mobile suppliers |
| Strong ecosystem to deliver complete product |
Application Example: Brand Protection

Memory Labels

Leverages unique properties of Thinfilm Memory

Commercial contracts with FMCG and Luxury Goods Companies

$79 Billion Market 2014 9% CAGR

Thinfilm Positioning

- RFID
- Taggants
- Holograms
- Watermarks
- Bar codes

Price

Security
Thinfilm Brand Protection

Measuring...

Simple

Conclusive

*Impossible to reverse engineer*

Authentic

Not authentic
Application Example: Time-Temperature Sensor Label

Sensor & Display Labels

Temperature Monitoring for Perishable Goods

$1.4 Billion in 2010
9% CAGR

500,000,000 color changing labels sold per year
Integrated systems ahead of schedule

July 2012
Concept Illustration

BIPP Target Specifications
✓ Printed Memory
✓ Electrodes for incorporating resistive sensor
✓ Printed Logic for reading sensor
✓ Printed Logic to write to memory
✓ In-label power source
✓ Optional display read-out
✓ Wireless read via near-field RF

Demonstrated December 2012 – October 2013
✓ Printed Memory
✓ Resistive Temperature sensor
✓ Printed Logic for reading sensor data
✓ Integrated battery power source
✓ Printed display (w/ organic display driver)
✓ Wireless development next step

October 2013
Major logic blocks demonstrated for closed systems
Thinfilm Acquires Kovio NFC Technology
Accelerates time-to-market for wireless products

- Kovio NFC supported by Google Android and recent NFC controllers
- Technology complements Thinfilm’s developments of integrated system products
- Target is to demonstrate NFC-enabled systems in 2014

"Internet of Everything"

1-2 years sooner!
Addressable Market of $20-25bn

<table>
<thead>
<tr>
<th>Application</th>
<th>Market size ($ bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring of perishable goods</td>
<td>1-2</td>
</tr>
<tr>
<td>Interactive packaging</td>
<td>2-5</td>
</tr>
<tr>
<td>Personal health care</td>
<td>1-1.5</td>
</tr>
<tr>
<td>Dynamic price display</td>
<td>5-10</td>
</tr>
<tr>
<td>Anti-theft/brand protection</td>
<td>2</td>
</tr>
<tr>
<td>Logistics</td>
<td>2-5</td>
</tr>
<tr>
<td>NFC &amp; &quot;Internet of Everything&quot;</td>
<td>10+</td>
</tr>
</tbody>
</table>

Attractive opportunities for partners to create value in systems and solutions.
Revenue Target of $1.5bn By 2020

Thinfilm revenue projections, 2014-2020; USD millions

Key driver

- Near-field systems will catalyze the Internet of Everything
  - Market estimate: 10+
  - Market share: 8-10%

- Disposable electronics in sensor and display labels
  - Market estimate: 10-15
  - Market share: 4-5%

- Replacing holograms with more secure alternative
  - Market estimate: 5
  - Market share: 15-20%

# labels sold (millions)

- Systems: 5, 1,400, 11,000
- BP: 100, 5,000, 24,000
- GM: BE, 40%, 60%
47 USDm cash position post October financing

- Positive operational cash expected in 2016
- Capex in 2014 - 2016 dependent on JV and licensing partners
- Forecast model for 2014 – 2016 based on expected share of production of partners

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</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>60</td>
<td>300</td>
</tr>
<tr>
<td>Operational cash</td>
<td>-7</td>
<td>-7</td>
<td>-8</td>
<td>-12</td>
<td>40</td>
</tr>
<tr>
<td>Capex</td>
<td>0</td>
<td>-3</td>
<td>-12</td>
<td>-18</td>
<td>-15</td>
</tr>
<tr>
<td><strong>Net Cash Flow</strong></td>
<td><strong>-7</strong></td>
<td><strong>-10</strong></td>
<td><strong>-20</strong></td>
<td><strong>-30</strong></td>
<td><strong>25</strong></td>
</tr>
<tr>
<td>Cash start of year</td>
<td>1</td>
<td>6</td>
<td>46</td>
<td>26</td>
<td>-4</td>
</tr>
<tr>
<td>Financing</td>
<td>11</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cash end of year</td>
<td>6</td>
<td>46</td>
<td>26</td>
<td>-4</td>
<td>21</td>
</tr>
</tbody>
</table>
Award Winning Technology Portfolio

- 2012 Wall Street Journal Innovation Awards
- 2012 World Technology Award, sponsored by CNN, Time, Science, and Technology Review
- 2012 IDTechEx Product Development (#1 consulting firm in Printed Electronics)
- 2012 FlexTech Innovation Award (US National Consortium on Printed and Flexible Electronics)
- 2010 Frost & Sullivan Product Development
- 2009 IDTechEx Manufacturing Award
Healthcare to the Home

The increasing number of older adults and the prevalence of chronic illness in their age group is moving healthcare into our homes.

For the patient:
• Remembers when you last took your pill
• Reminds you to refill your medication
• Measures oxygen and glucose in the blood

For the care-giver:
• Pre-screens patients at low cost
• Monitors the safety and efficacy of vaccines and temperature sensitive medication
• Signals distress of incontinent patients

Conditions that are best suited for technology-enabled home care include:
• chronic
• can be addressed by protocols
• Do not require immediate care-giver intervention

Diabetes, hypertension, congestive heart failure, chronic obstructive pulmonary disease, fracture prevention

The goal of technology-enabled home-care is to prevent or reduce the need for costly institutional care.
Mobile Logistics

Printed Electronics Systems in Logistics

- **Track and Trace Components**
  Timely measurement of changes in quality such as temperature, humidity, and decomposition

- **Defence Readiness**
  How fit is a soldier after having suffered shell shock or chemical attack?

- **Appliance Monitoring**
  Communicates when an appliance is out of a product or if a product needs a refill.

- **Shipment and Product Labeling**
  Where does a product come from and how long has it been in transit?

**Sensor Label:**
- picks up data and transmits it.
- different types of sensors; temperature variations, humidity, chemical traces.

**Dynamic Display Label:**
- provides real-time information and updates status.
- Timer measures how long a shipment has been underway.
International Footprint; Installed Manufacturing Capacity

Kroenert R2R printer: 200 million units per year of memory

Ohio GT gravure printer: 50 million units of logic

Chemistry and Print Laboratory

US
San Francisco (Sales, Production, R&D)

Japan
Tokyo (Sales)

Sweden
Korea
Pyoungtaek (production at InkTec)

Norway
Oslo (HQ, Sales)

Linköping (Production and R&D)
THIN.OL (Oslo Axess) – Mcap 471 USDm

**THIN share price 12 months [NOK]**

![Graph showing THIN share price for 12 months, from Mar-13 to Jan-14.]

**THIN share price 5 years [NOK]**

![Graph showing THIN share price for 5 years, from Jan-09 to Jan-14.]

**Top 20 Shareholders**

<table>
<thead>
<tr>
<th>Name of shareholder</th>
<th>No of shares</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>INVECSO PERP HIGH INCOME FUND BNY MELLON</td>
<td>58 308 255</td>
<td>12.4%</td>
</tr>
<tr>
<td>EUROCLEAR BANK S.A./N.V. (‘BA’) 25% CLIENTS</td>
<td>52 768 571</td>
<td>11.2%</td>
</tr>
<tr>
<td>THE BANK OF NEW YORK MELLON SA/NV BNYM SA/NV</td>
<td>44 358 411</td>
<td>9.4%</td>
</tr>
<tr>
<td>ASAH AS</td>
<td>25 500 000</td>
<td>5.4%</td>
</tr>
<tr>
<td>SIMPSON FINANCIAL LTD</td>
<td>17 123 940</td>
<td>3.6%</td>
</tr>
<tr>
<td>HÅVI AS</td>
<td>15 496 650</td>
<td>3.3%</td>
</tr>
<tr>
<td>SUNDVALL HOLDING AS</td>
<td>14 734 247</td>
<td>3.1%</td>
</tr>
<tr>
<td>MP PENSJON PK</td>
<td>11 354 165</td>
<td>2.4%</td>
</tr>
<tr>
<td>DUKAT AS</td>
<td>10 280 000</td>
<td>2.2%</td>
</tr>
<tr>
<td>ALDEN AS</td>
<td>9 840 000</td>
<td>2.1%</td>
</tr>
<tr>
<td>FOOD INTERNATIONAL LTD.</td>
<td>9 131 162</td>
<td>1.9%</td>
</tr>
<tr>
<td>SOLON AS</td>
<td>8 290 000</td>
<td>1.8%</td>
</tr>
<tr>
<td>RUNAR FORSLAND</td>
<td>7 602 464</td>
<td>1.6%</td>
</tr>
<tr>
<td>GPR TECHNOLOGY FUND LIMITED</td>
<td>6 902 974</td>
<td>1.5%</td>
</tr>
<tr>
<td>CHARLES STREET INTERNATIONAL LTD C/O MOLARD</td>
<td>5 728 174</td>
<td>1.2%</td>
</tr>
<tr>
<td>FESTVÅG AS</td>
<td>5 653 520</td>
<td>1.2%</td>
</tr>
<tr>
<td>MARITIM KOMPETANSE AS</td>
<td>5 450 000</td>
<td>1.2%</td>
</tr>
<tr>
<td>FOOD INTERNATIONAL LTD</td>
<td>5 250 698</td>
<td>1.1%</td>
</tr>
<tr>
<td>STOREBRAND VEKST JPMORGAN EUROPE LTD, OSLO</td>
<td>4 307 201</td>
<td>0.9%</td>
</tr>
<tr>
<td>PALO ALTO RESEARCH CENTER INC.</td>
<td>3 967 740</td>
<td>0.8%</td>
</tr>
<tr>
<td>Other</td>
<td>149 577 640</td>
<td>31.7%</td>
</tr>
<tr>
<td><strong>Total shares outstanding</strong></td>
<td><strong>471 625 812</strong></td>
<td><strong>100.0%</strong></td>
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</tbody>
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*Note: Shares are listed in descending order of share percentage.*
Seasoned management team; Board of Directors and Technology Advisors with unique experience and expertise

**Management Team**

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Experience Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davor Sutija, CEO</td>
<td>CEO</td>
<td>General management experience from Microsoft, Fast Search and Transfer, REC; board experience from high-tech companies</td>
</tr>
<tr>
<td>John Afzelius-Jenevall, CFO</td>
<td>CFO</td>
<td>Formerly VP, Corporate Development of Orkla; Strategy, Corporate Development &amp; M&amp;A and financial experience from Catella and Nordea</td>
</tr>
<tr>
<td>Dr. Christer Karlsson, CTO</td>
<td>CTO</td>
<td>Research and Project Management experience from the National Defence Research Establishment</td>
</tr>
<tr>
<td>Jennifer Ernst, Executive Vice President, Sales and Business Development</td>
<td></td>
<td>Printed Electronics Business development experience from PARC, a Xerox company</td>
</tr>
<tr>
<td>Dr. Peter Fischer, Chief Product Officer</td>
<td></td>
<td>Commercialization and scale-up experience from Printed Electronics. Previously CTO Plastic Logic</td>
</tr>
<tr>
<td>Dr. Henrik Sjöberg, Senior Vice President of Product Management</td>
<td></td>
<td>R&amp;D and Product Management experience from Micronic Mydata and ACREO</td>
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**Board of Directors**

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<tr>
<td>Morten Opstad, Chairman of the Board</td>
<td></td>
<td>Partner and chairman of law firm Ræder, Chairman of several tech companies</td>
</tr>
<tr>
<td>Dr. Rita Glenne</td>
<td></td>
<td>R&amp;D and production experience</td>
</tr>
<tr>
<td>Margareta Josefsson</td>
<td></td>
<td>Research and product development experience</td>
</tr>
<tr>
<td>Rolf Åberg</td>
<td></td>
<td>Former Thinfilm CEO, general management experience</td>
</tr>
<tr>
<td>Preeti Mardia</td>
<td></td>
<td>Electronics and semi-conductor scale-up experience</td>
</tr>
<tr>
<td>Tor Mesøy</td>
<td></td>
<td>Former partner at McKinsey and Accenture</td>
</tr>
</tbody>
</table>

**Technology Advisory Council**

<table>
<thead>
<tr>
<th>Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Professor Ana Claudia Arias</td>
<td></td>
<td>Printed Electronics research experience from UC Berkley, PARC and Plastic Logic</td>
</tr>
<tr>
<td>Professor Magnus Berggren</td>
<td></td>
<td>Research experience from Organic Electronics from University of Linköping</td>
</tr>
<tr>
<td>Professor Donald Lupo</td>
<td></td>
<td>Organic Electronics research experience from ETH, Hoechst, Sony and NTera</td>
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