

Workshop F : Micro-Electronics and Silicon Design

This is your opportunity to hear about the strengths and potential of the micro-electronics and silicon design business sector how the LEP could support their further development and to give your views

Professor Mark Beach, University of Bristol
Phil Morris, ST Microelectronics (R&D) Limited



Microelectronics

An opportunity for growth

Phil Morris

24 January 2011

Strong Foundations



- The Southwest of England – probably the largest silicon design cluster outside California!
 - 800 companies⁽¹⁾
 - 18,000 employees⁽¹⁾
 - twice the size of Cambridge⁽¹⁾
- In the last decade
 - Start-ups attracted around \$550M and returned \$800M to shareholders⁽²⁾
 - \$4bn of inward investment⁽¹⁾
 - \$1.5bn of private capital⁽¹⁾
- What slice does the LEP have?
 - A conservative estimate would be 40%-50%⁽³⁾

(1) SW Microelectronics Leaderships Group

(2) SWRDA

(3) Based on Silicon SW published data

High Growth and Highly Skilled



- This is a growth industry
 - Despite the tech bubble crash, CAGR 1999 – 2010 was 5%⁽¹⁾
 - Forecast CAGR 2009 to 2012 is 13.4%⁽²⁾
 - In 2010 Global semiconductor sales were \$300bn⁽²⁾
- This is a highly skilled industry
 - 90%+ jobs are graduate or post graduate level
 - Average salary £45K⁽³⁾
 - Hardware, Software and System skills all key
 - Management and entrepreneurship also key
 - retention within area

(1) DateBeans (semiconductor sales)

(2) SIA

(3) Radford's hi-tech salary survey

Capabilities exist



- Broad range of companies and talent
 - Large multinationals, ST, HP, Toshiba, Infineon, Broadcom...
 - Strong technology leaders, ICERA, Picochip, Xmos...
 - Vibrant SME sector
- Strong research capabilities
 - Bath, Bristol, UWE
- Strong incubators
 - SetSquare at Bath and Bristol
- The Science Park?
- The beginnings of a strong start-up culture...

The Opportunities are Huge



- Microelectronics as an enabling technology in other key growth areas
 - Microelectronics and creative industries (apple)
 - Microelectronics and biomedical (\$6M man)
 - Microelectronics and green energy (smart grids)
 - Microelectronics and aerospace (fly by wire)
- Key applications areas
 - Digital Britain
 - Communication
 - Wireless computing
 - Sensors
 - Low power
 - Novel approaches (plastics, optical, MEMS, quantum....)

Leverage is High



- Barriers to further success not insurmountable
- Industry fragmented
 - Average company size 22 people
 - Few physical focal points
- Low global recognition of the cluster
 - Attracting talent
 - Attracting infrastructure (places, support businesses, finance...)
- Development often high cost and long
 - What will be the new business models?
- HEI – Industry links – do we sweat them enough?
- Skills – average company size means little room for graduate programmes....
- Supply chain connectivity
 - Linking ideas with end-user companies.

Unlocking the potential



- Improve networks (iNET a good start), across the industry, up the supply chain, with end users....
- Increasing global awareness of the cluster
- Helping the infrastructure develop (VCs, legal, accountancy, IP, banking...)
- Finding new business models
- Improving connections with other growth areas (creative, bio, green, aero...)
- Science park – a focal point
- Deepening HEI links
- Addressing skills needs
- **Strengthening the start-up culture**



West of England Local Enterprise Partnership