

**Economic Development for Physicists from  
Developing Countries**

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Trieste - ITALY

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***CASE STUDY 2 AND DISCUSSION***

- ***Technology Transfer to a start-up from 2 sources***
- ***Use of a Fabrication Incubator***
- ***Volume manufacture model testing***



# **Economic Development for Physicists from Developing Countries**

**Friday 1<sup>st</sup> December**

**Case study 2**

# Case Study 2 OUTLINE

- SOA Roadmapping
- Enterprise Fellowships
- Technology Transfer to a start-up from 2 sources
- Use of a Fabrication Incubator
- Management change
- Volume manufacture model testing

# SOA Roadmapping

- Exercise to look at World Markets, World Technology and map Scottish strengths against this backdrop
- Identified Microdisplay backplane and Light Emitting Polymer expertise at two Universities
- Recommended bringing two sources of expertise together
- Funded a study to investigate feasibility

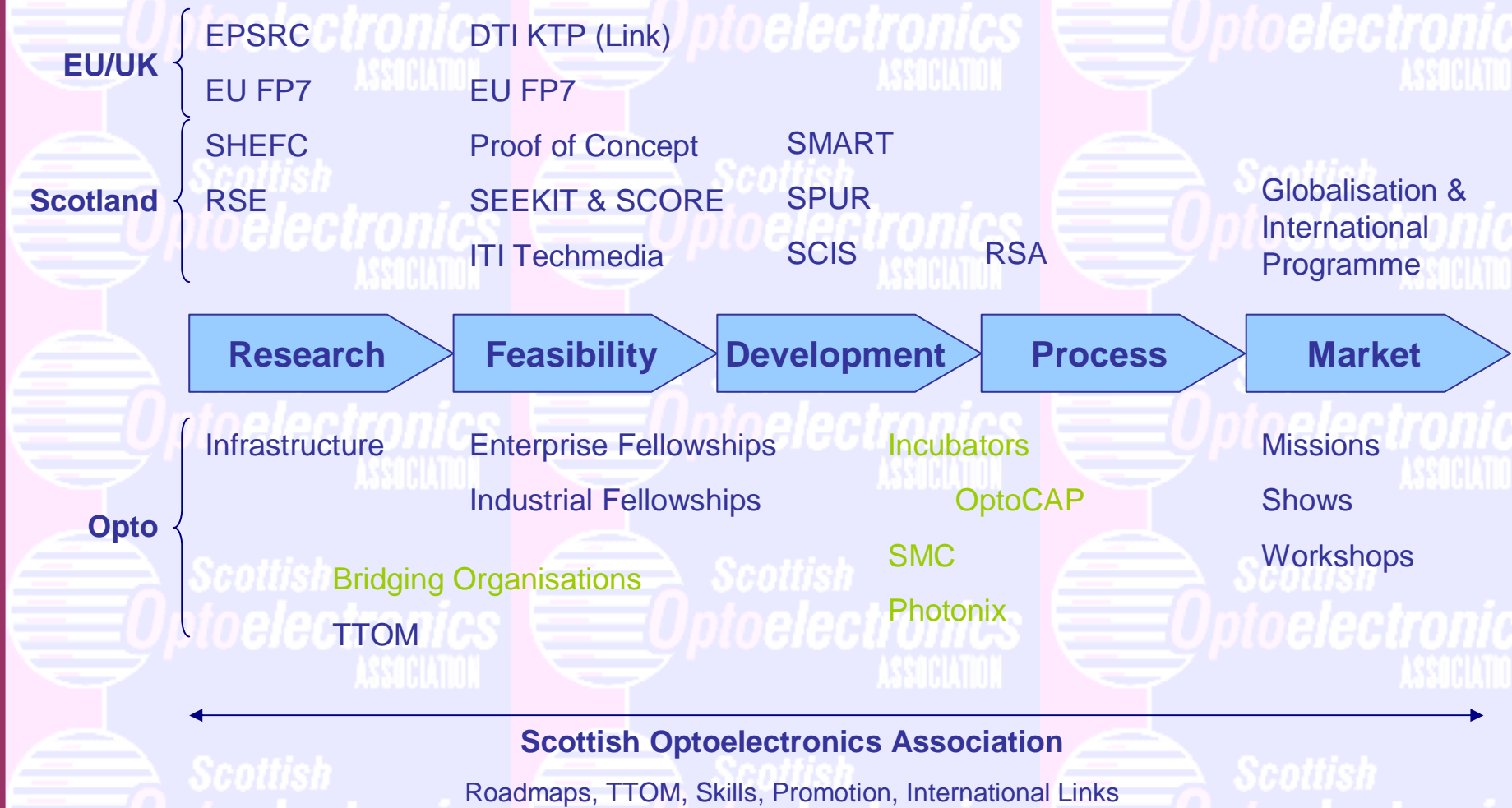
# Enterprise Fellowship

- One of the Feasibility Study investigators was an Enterprise Fellow and developed a business plan for the product.
- The two investigators formed a partnership and looked for sources of investment
- Gained the support of a “Serial Entrepreneur” and set up a company.

# Company formed in Specialist Incubator

- Scotland has three Specialist Incubators
  - Scottish Microelectronics Centre (Silicon), Photonix (III-V) and OptoCap (Encapsulation)
- These Incubators have the capital Equipment to prototype devices
- New companies can thus hire time rather than using investment for purchasing.

# Optoelectronics Support



# What are TTOM Awards?

[www.TTOM.org.uk](http://www.TTOM.org.uk)

- Feasibility Studies
  - The TTOM Awards programme will fund studies by partnerships involving a Scottish SME and researchers from an HEI.
  - Its aim will be to establish then enable technology transfer projects particularly with a cross-sectoral and inter-disciplinary focus.
- Grants of up to £5000 are to be awarded to the HEI to tackle a problem or perform a feasibility study relevant to the SME.



# Company Phases

- Start up - Feasibility Development –  
Technology emphasis
  - Founders both from Universities, but  
Chairman Serial Entrepreneur
  - Know your motivation & why you are doing it
  - Academic brilliance does not count with  
investors
  - Talk about the market think about technology

# Management Change

- Customer focus
  - Bring in new people with complementary skills
  - Know your strengths and stick to your guns
  - Look to company's next product or move on
- Manufacturing Focus
  - Bring in more new people

# Volume Manufacture Options

- Scotland has Incubators for Silicon and Encapsulation these can produce small volumes and prove manufacturing process
- Decide how to move to volume
  - Plant in Scotland
  - Silicon backplane in Asia, IP process in Scotland, encapsulation and supply chain access Asia
  - Plant in East Europe
    - Protection of IP, Grants, supply chain, skills

# Timeline

- Silicon backplane research at University from mid 1980s
- Polymer work from mid 1990s
- Roadmap published 1998
- Company formed 1999
- 1<sup>st</sup> round funding \$2.5M
- 2002 2<sup>nd</sup> round \$9M
- 2004 3<sup>rd</sup> Round \$9M
- 2005 Floatation on AIM
- 2006 Issue new shares for \$5M to finance manufacturing plant