PHOTONICS 21

Information Society Technologies

First project progress report

Project no. 287575

Innopho21

Innovation and Implementation Strategy Photonics21

Instrument: Coordination Action

Thematic Priority: Information Society Technologies

D 5.5

Public Chart Set

Due date of deliverable: **Month 18**

Start date of project: 01.09.2011 Duration: 36

Project co-funded by the European Commission within the Seventh Framework Programme (2008-2011)		
Dissemination Level		
PU	Public	x
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Organisation name of lead contractor for this deliverable: VDITZ

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Photonics - A Key Enabling Technology on its way to Horizon 2020

The European technology platform Photonics21, the strategic research agenda, and the commitment of the European photonics industry for a photonics PPP

European Technology Platform Photonics21

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Overview

- **Photonics: Impact on European economy and society**
- **About Photonics21**
- **Establishing a Photonics Public Private Partnership in Horizon2020**

Photonics – the Technology of the Harnessing of Light

Photonics comprises the

- ► **generation**
- ► **amplification**
- ► **transmission**
- ► **modulation**
- ► **detection**

of light

Lighting
(LEDs, displays)

Manufacturing
(high power lasers)

Telecommunication
(fibers, components, systems)

Medicine
(lasers, microscopes)

Sensor technology
(optical sensors)

LED light bulb

glass fibers

Photonics bears the same relationship to light and photons as electronics does to electricity and electrons.

Photonics will Impact Most Areas of our Lives

► Healthcare

- Early diagnosis through new detection methods
- Minimal invasive surgery

► Energy Efficiency

- LEDs, OLEDs and intelligent networks can save 2/3 of electricity for lighting

► Safety & Security

- Smart sensors for automotive safety; IR detection systems

► Manufacturing

- Lasers enable new lightweight structures
- Laser drilling: 25,000 holes per second for efficient solar cells

► Inclusion

- High speed fibre networks with multi-terabit capacity are backbone for web 2.0 & 3.0 products & internet of things

Photonics – A Key Enabling Technology with Enormous Economic Potential

- Total Photonics market ~ € 300 bn
- **European Photonics market ~ € 60 bn**
- Estimated annual **growth rate ~ 8-10%**
- Estimated market size in 2015 ~ € 480 bn
- Many market-leading industrial players
- **More than 5000 SMEs**
- Market shares of European companies
  - Lighting 40%
  - Production technology 45%
  - Optical communication 24%
- **~ 300,000 employees**

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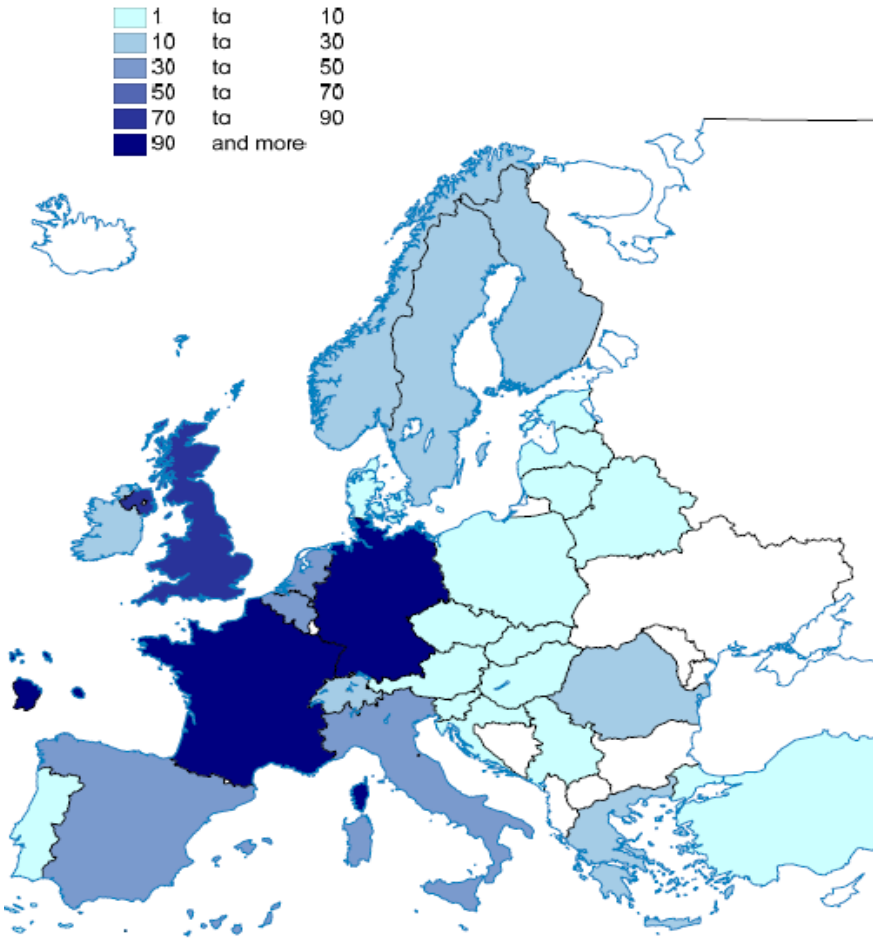
➢ About Photonics21

Photonics21 European Technology Platform

Our Members - Representatives from Industry, Academia and Politics

Photonics21 members represent leading photonics stakeholders along the whole economic value chain throughout Europe.

- More than 2000 members from all EU countries
- Broad, representative membership composition
  - Balanced share of industry and Research & Technology Organisations (plus Associations, Cluster, National Technology Platforms)
  - Multiple markets (telecommunication, lighting, manufacturing, health)
  - Throughout the value-chain (components-systems)



Photonics21 Executive Board – Top level representation

President: Michael Mertin, President & CEO Jenoptik

Vice Presidents:
Giorgio Anania, President & CEO Aledia
Jaap Lombaers, Managing Director Holst Center, TNO
Malgorzata Kujawinska, Warsaw University of Technology
Bernd Schulte, COO Aixtron

Work Group Chairs:

Information & Communication	Industrial Production/ Manufacturing & Quality	Life Science & Health	Emerging Lighting, Electronics & Displays
Alfredo Viglienzoni, Head New Business Development, Product Area IP & Broadband Ericsson	Eckhard Meiners, CEO Trumpf Laser Marking Systems	Stefan Trager, Vice President Life Science Division, Leica Microsystems	Klaas Vegter, CTO Philips Lighting

Security, Metrology & Sensors	Design & Manufacturing of Components & Systems	Photonics Research , Education & Training
Peter Seitz, Managing Director Hamamatsu Photonics – Applied Research Europe	Mike Wale, Director Active Products Research Oclaro	Roberta Ramponi, Professor Politecnico di Milano

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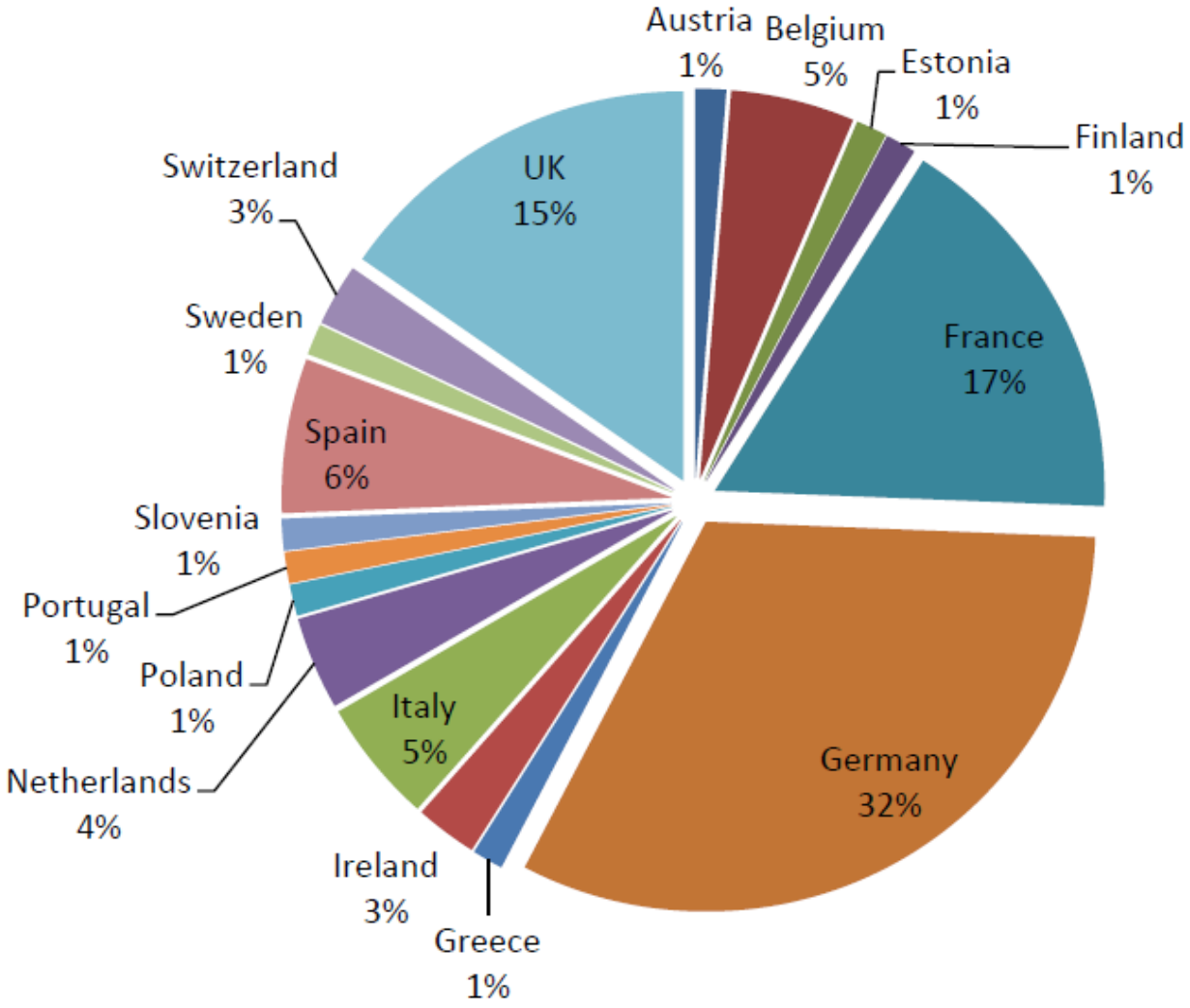
Main decision making body of Photonics21 (BoS) – Geographical distribution of the 75 members



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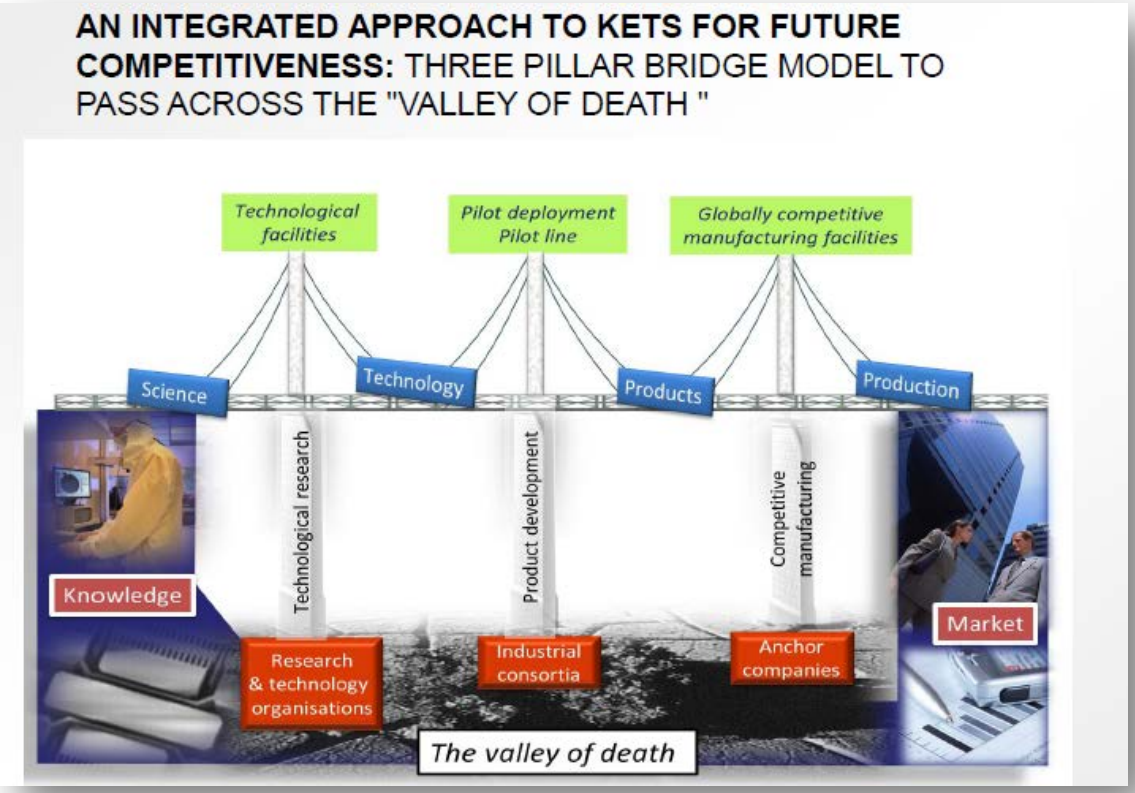
- **Establishing a Photonics Public Private Partnership in Horizon2020**

Analysis: What it is all about – Overcoming the „Valley of Death“



Source: High Level Expert Group on Key Enabling Technologies – Final Report, July 2011

Analysis

- Europe has an excellent research base
- Europe lags ability to quickly turn inventions into innovations
- Only marketable products will create jobs and wealth

Integrated Approach

- Cover the full innovation chain
- Addressing basic and applied research, demonstrators, standardization measures, deployment and market access,
- All at the same time
- Significantly
- In a logical joined-up manner.

Photonics21 Public Private Partnership – Expectations and Commitment

Establish a Photonics Public Private Partnership in Horizon 2020 (2014-2020)

What we expect and advocate

- Long-term commitment in funding
- Partnership at equal level
- Significant budget that reflects the means of Photonics as a KET
- Lean, simple and efficient structures

What we offer and commit to

- Investing in Europe's long-term competitiveness and growth

  4:1 leverage EU funding by private investment ➔ 200 m €/yr (=1,4 bn € public money over 7 years) x 4 = overall ~ 7 bn € investment

- Measure success by Key Performance Indicators (KPIs)
- Preparation of a **PPP Multiannual Roadmap** (Strategic Research Agenda) on Photonics in Horizon2020 with involvement of the whole European Photonics community

Photonics PPP Multiannual Roadmap: process towards Horizon 2020

March 2012

Photonics21 Annual Meeting

Work Groups started the photonics road-mapping

June – July 2012

Further Work Group Meetings to elaborate the work group specific input to the photonics roadmap

July - Oct. 2012

Editing of the photonics roadmap;

Approval by the Work Groups

November 2012

Photonics21 Board of Stakeholders Meeting

Approval of the draft photonics roadmap by the BoS members

Dec. – Feb. 2012

Public consultation of the photonics roadmap document

Annual Meeting 2013

Publication of the final photonics roadmap document

Photonics PPP Multiannual Roadmap

Broad involvement of the Photonics community in Europe

- More than **14 Photonics21 workshops** conducted over the course of the last year
- More than **400 attendees** in the workshops from all over Europe
- Content of the draft roadmap circulated and **coordinated with 2000 members** of the platform
- High level endorsement (Board of Stakeholders) of the roadmap by the leaders from European industry and research

- **Photonics PPP Multiannual roadmap is a joint strategy of the Photonics community in Europe**

Our Integrated Approach in a PPP to bridge the Innovation Gap

- **Disruptive and Road-Map based Core Photonic Technologies**
  - Roadmap-based research – value chain approach, involvement of end users
  - Disruptive technology - breakthrough advances for disruptive research
- **Demonstration Programmes**
  - Deployment programmes to leverage EU infrastructure to create jobs..
  - Coordinated market pull/push measures seed and accelerate market penetration
- **Photonics Manufacturing Platforms – Manufacturing in Europe**
  - Generic photonic foundries – improve infrastructure for photonics manufacturing
  - Establish public-private pilot production facilities for industry/research
- **Innovative Photonics SMEs & Mid Sized Companies**
  - Light touch' open schemes
  - Fast-track funding allowing prototyping & short-term commercialization
- **Public Procurement**
  - Life Cycle cost approach by public procurement
- **Support Actions**
  - Education, training and skills development
  - Standardization & International Cooperation & Outreach.

Don´t miss: Photonics21 Annual Meeting 2013 – 29/30 April 2013

Pictures: Impressions from Photonics Annual Meeting 2012 in Brussels with Commissioner Kroes giving the keynote speech and got awarded by OSA as well as a high ranking panel discussion with MEP Malcolm Harbour and Zoran Stancic from DG CONNECT as well as Executive Board Members Martin Goetzeler and Giorgio Anania from Photonics21

Photonics21 – How to get in contact

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