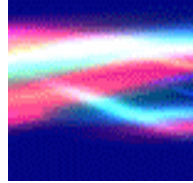
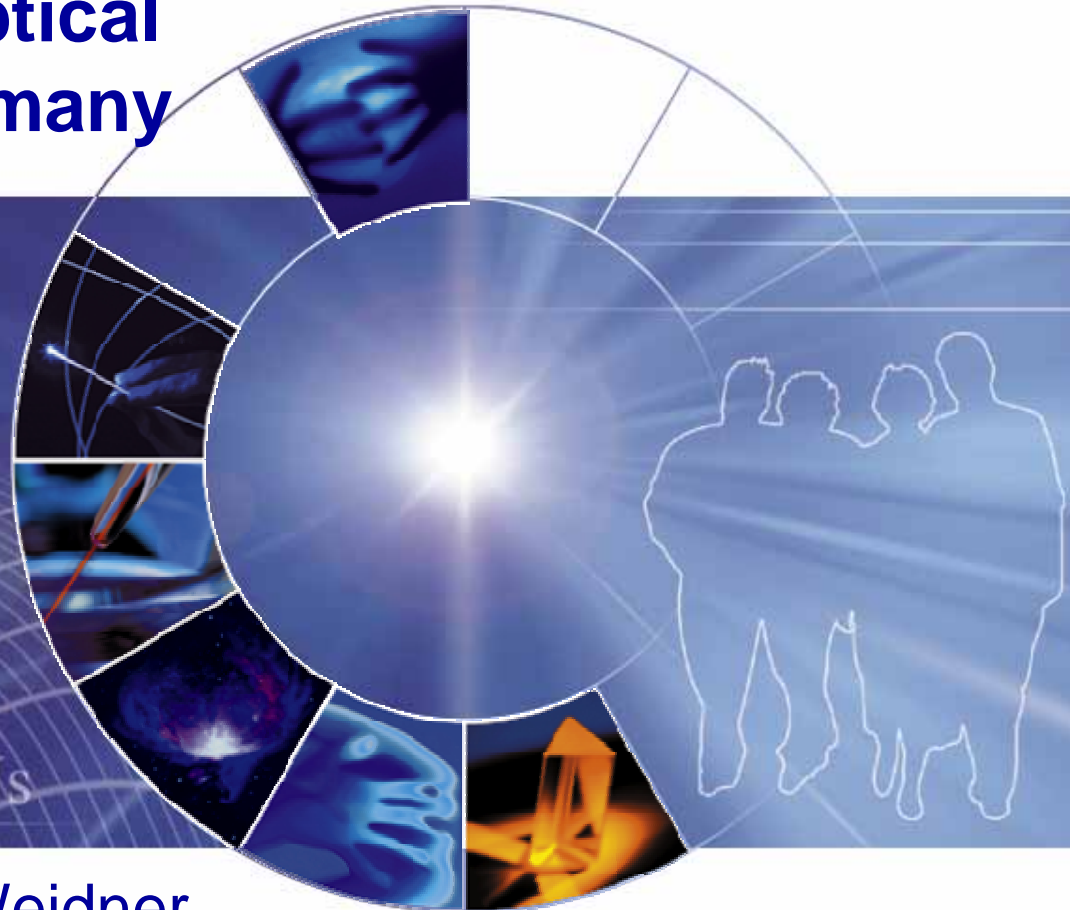


OptecNet Deutschland and OpTecBB- Elements of the Strategy for Strengthening the optical Technologies in Germany

OpTec BB

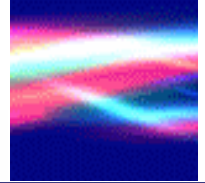


Optische Technologien aus
Berlin und Brandenburg



$$h = 6,6 \cdot 10^{-34} \text{ Js}$$

Bernd Weidner
Member of the Board of OptecNet Deutschland
CEO of OpTecBB, Berlin



Situation of the optical technologies before 2000

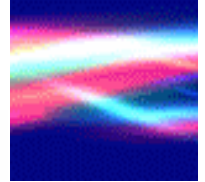
- Strong basic research in a wide range of optics/ photonics
- Naturally grown concentration of sciences and industry in special regions of Germany
- No specially public efforts and political recognition of optics/photonics and of its economic potential in a broad sense by the regional and federal government, **excluding the laser research and its industrial applications**
- In many regions Optics and photonics belonged to the great unknown



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Activities since 1999/2000

Systematic strategic approach for strengthening the optical technologies:

- Nation-wide discussions, workshops
- German Agenda for the Optical Technologies
- Funding programme Optical Technologies 2002 to 2006
- structural measures:

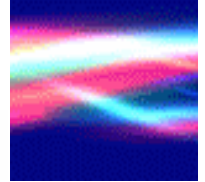
Foundation of the German Competence Networks for Optical Technologies (2001)



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Nation-wide acceptance and political support

- 1st National Congress, Berlin, February 2003
„Optical Technologies –
Future for the German Economy“
- 2nd National Congress, Berlin, February 2005
„Optical Technologies –
Innovation Chances for Germany“

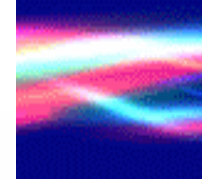


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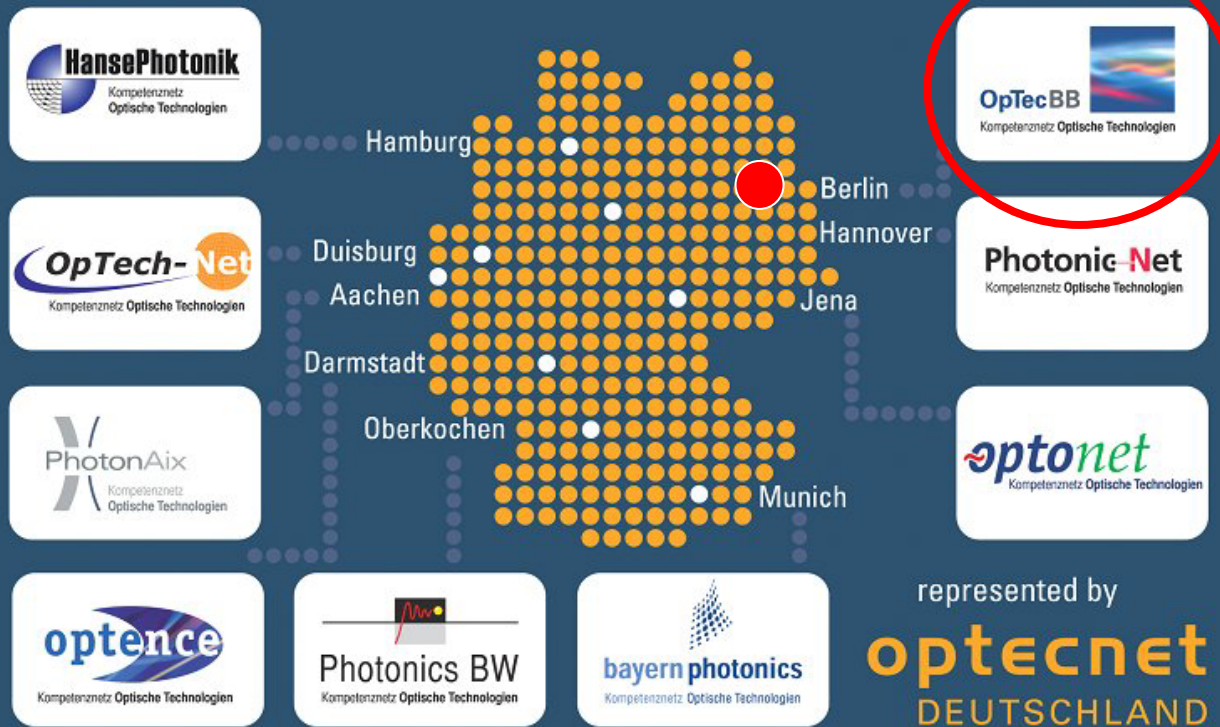


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German Networks for Optical Technologies

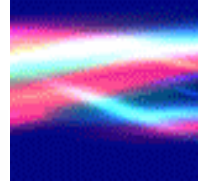
Competence Networks for Optical Technologies



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Key Fields of Recommended Actions of the German agenda

Optical Technologies for:

Information & Communication

LifeScience & Biomedics

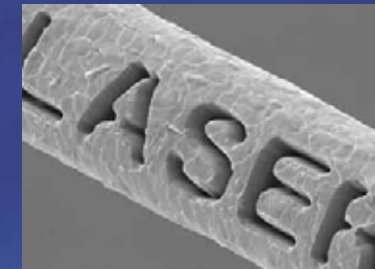
Lighting & Energy

Optical production techniques & sensors

Optical components & systems

Application-oriented R&D

Training & further education

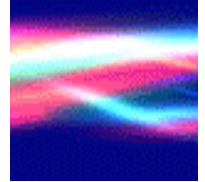


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Future research topics

Within the **national funding program** for Optical Technologies the BMBF (German Federal Ministry of Education and Research) sponsors research projects in the following fields of technology:

- OLEDs
- Biophotonics
- Optical components/systems incl. large-scale production technologies
- Metrology and sensor technology
- [Terahertz technology]

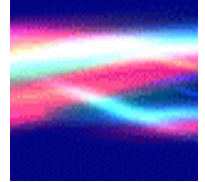


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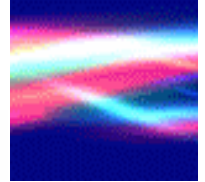


Facts & figures of the German Photonics Market

- 100,000 jobs are directly dependent on photonics
- 11.1 % of the annual turnover spent on R&D
- 66.6 % of the turnover is made with innovative products
- High export rate of 66.8 % in 2004 (2003: 65.1 %)
- 40% of the beam sources used worldwide in material processing and 25% of laser systems come from Germany



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Total revenue of the laser and optical components industry 2000 - 2004

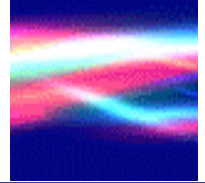


Courtesy of SPECTARIS e.V. and German Federal Statistical Office

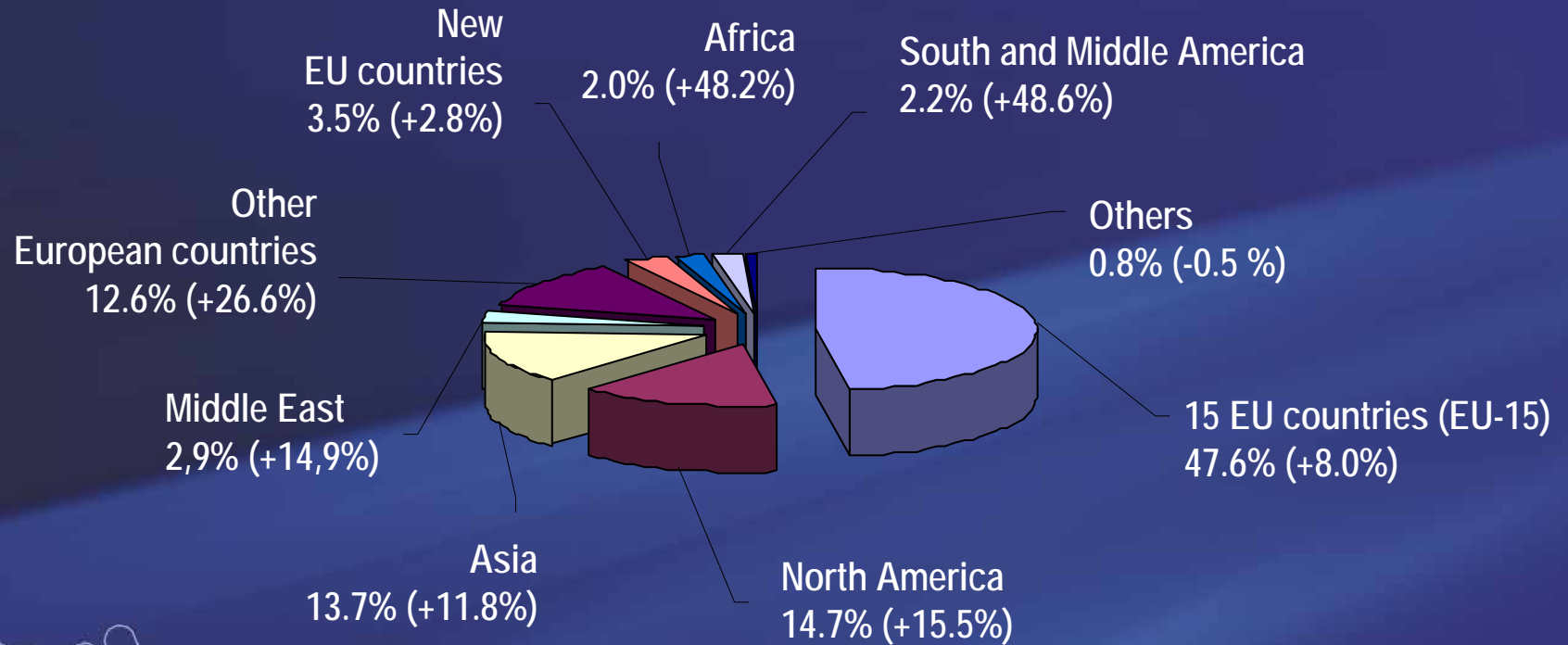
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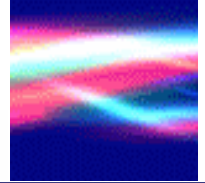
Export of laser and optical components in 2004



Brackets: variation of the (absolute) export rate compared with 2003



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Expectations for the future

Increased revenues for the next five years (on average 10% per year)

Further development of photonics as a pillar of economic growth in Germany

More jobs in the German photonics sector

23% expect a strong growth in employment

60% expect a slight growth in employment

Several **applications** are still **to be opened up** for photonics
(e.g. EUV lithography) → great market potential to be tapped

Future opportunities for Germany

Specialization on high-quality products (e.g. photonic crystals, lasers, miniaturization)

Timely **occupation of market niches**

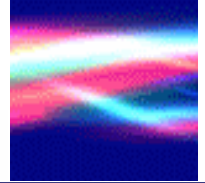


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Symbols for optics/ photonics in Berlin and Brandenburg

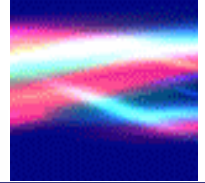


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Potential of the region in the optical technologies

- **270 Companies** with products in the field of optical technologies or using the OT as main technologies in the production e.g. Siemens, OSRAM, ADC, Berliner Glas KG...
- **30 university and non-university research institutes** e.g. Humboldt-University, Technical University Berlin, Max Born Institute, Ferdinand Braun Institute...
- **total turnover** in the region: nearly 2 Billion EUR

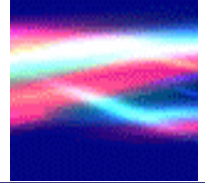


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OpTecBB- an element of the strategy for the region Berlin-Brandenburg

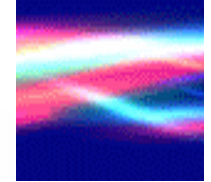
- **September 14th 2000: foundation of OpTecBB as a registered non-profit association (14 foundation-members)**
- **March 23rd 2001: OpTecBB is one of the winners in the nation-wide competition in Networks for Optical Technologies**
- **July 1st 2001: start of the project : 7 regional networks**



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OpTecBB- Objectives

- intensify regional cooperations
- focussing competence, knowledge and sharing resources
- activate complete vertical value adding chains
- support funding proposals and establish sup-networks
- concentrate and reformat education and training in OT to meet the needs of the industry better
- enhance the public appearance and stimulate interest in OT

Our Vision:

Establish as a Trade Mark:

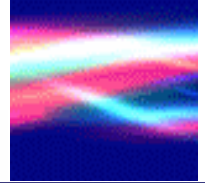
Optical Technologies from Berlin and Brandenburg



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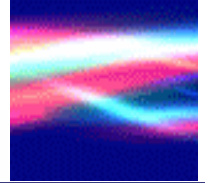




Structure of OpTecBB

- **Main assembly: annual meetings**
- **Board of Directors: 11 members (CEOs, directors of institutes and technology foundations...), quarterly meetings at least**
- **Office (a staff of four full-time specialists)**
- **Special focus areas - headed by elected speakers**





Composition of the budget

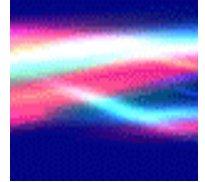
- 50 % federal funding by the Federal Ministry of Education and Research (for 5 years)
- 15 % funding by the states of Berlin and Brandenburg
- 35 % membership fees or other income



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Basis for membership in OpTecBB

Definition according to the Deutsche Agenda OT for the 21st Century (and the US-Study “Harnessing Light...“):

Optical Technologies are all technologies for

- ***generating***
- ***amplifying***
- ***shaping***
- ***transferring***
- ***measuring and***
- ***application of light***
- ***including the scientific foundations.***

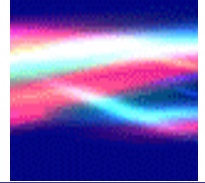
OpTecBB-members represent a large bandwidth of competencies and disciplines in optics and photonics



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Membership fees*

classification	Turnover / Mio EUR	fee / EUR
1	< 0,5	260
2	0,5 to 1	520
3	1 to 2	770
4	2 to 5	1.540
5	5 to 10	2.570
6	> 10	5.130

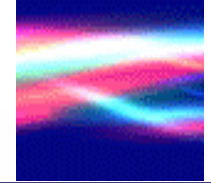
* dependent on the economic conditions in the different regions



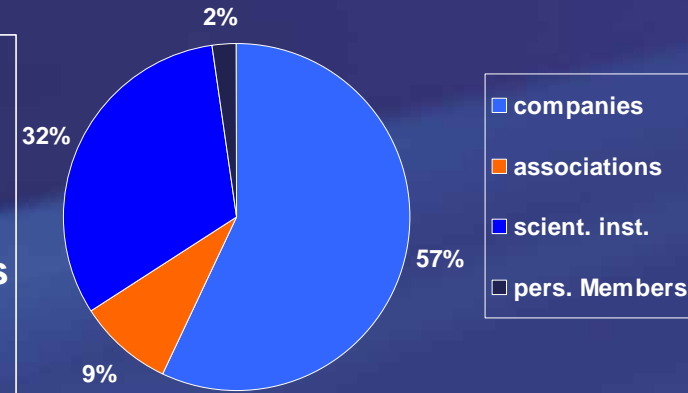
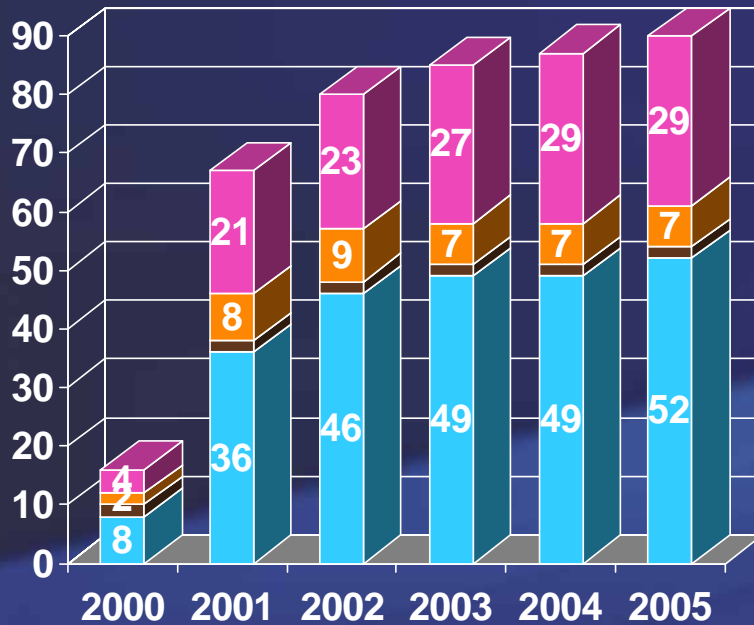
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Member statistics



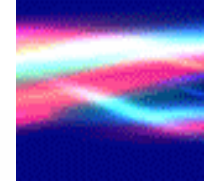
OpTecBB is the network with the largest number of members in Germany



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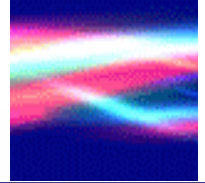


Network Concept of OpTecBB

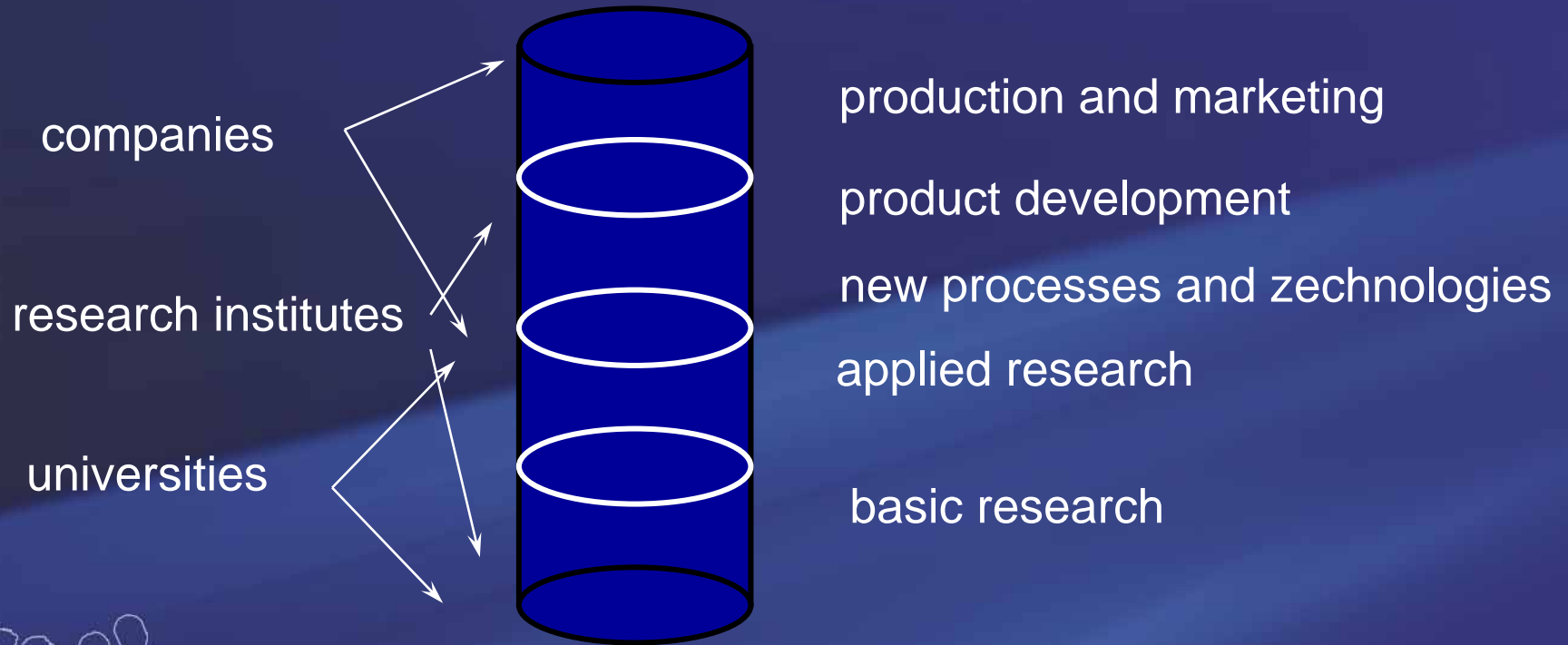
- **Cooperation with economists of the Free University/ Technical University: „Enterprise Networks“, (Sydow, Windeler)**
- **Jointly elaborated network concept for OpTecBB**
- **Different stages with different measures : forums and networking days during a five year period**

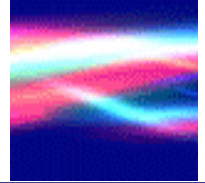
regionales Kompetenznetz





OpTecBB – vertical networking in the main fields value adding chain





OpTecBB – Focus Areas of Competence

- optical technologies for the Internet
- optical technologies for traffic and space programmes
- ultra-violet and X-ray technologies
- optics/ photonics for biomedicine

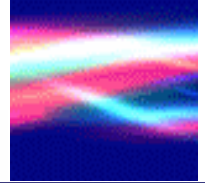
- training and further education in the field



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OpTecBB – further Areas of Competence

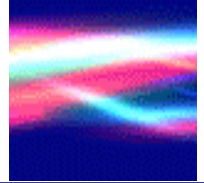
- laser - research, development and production
- synchrotron technology
- illumination technology, light and radiation measurements
- classical optics: design and production
- spectroscopy in a wide range of the optical spectrum



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Some practical measures for networking within OpTecBB



strategic workshops



periodical interdisciplinary meetings

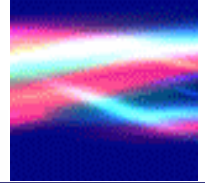


specific meetings in the main fields



joint marketing actions





Activities for and with the members

- monthly meetings
- annual OpTecBB-workshops
- strategic discussions

and more and more joint projects

**Result: a climate of mutual trust
and co-operation as the basic condition for
successful networking!**





At international Exhibitions with our Members



Optische Technologien aus
Berlin und Brandenburg



Autor: Bernd Weidner
Version: 0001
Datum: 30.11.2005

OpTecBB



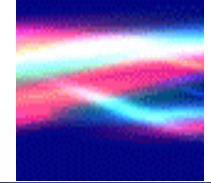
Vorstand:
Dr. Karl Heinz Schönborn

Geschäftsstelle OpTecBB
Geschäftsführer: Dr. Weidner

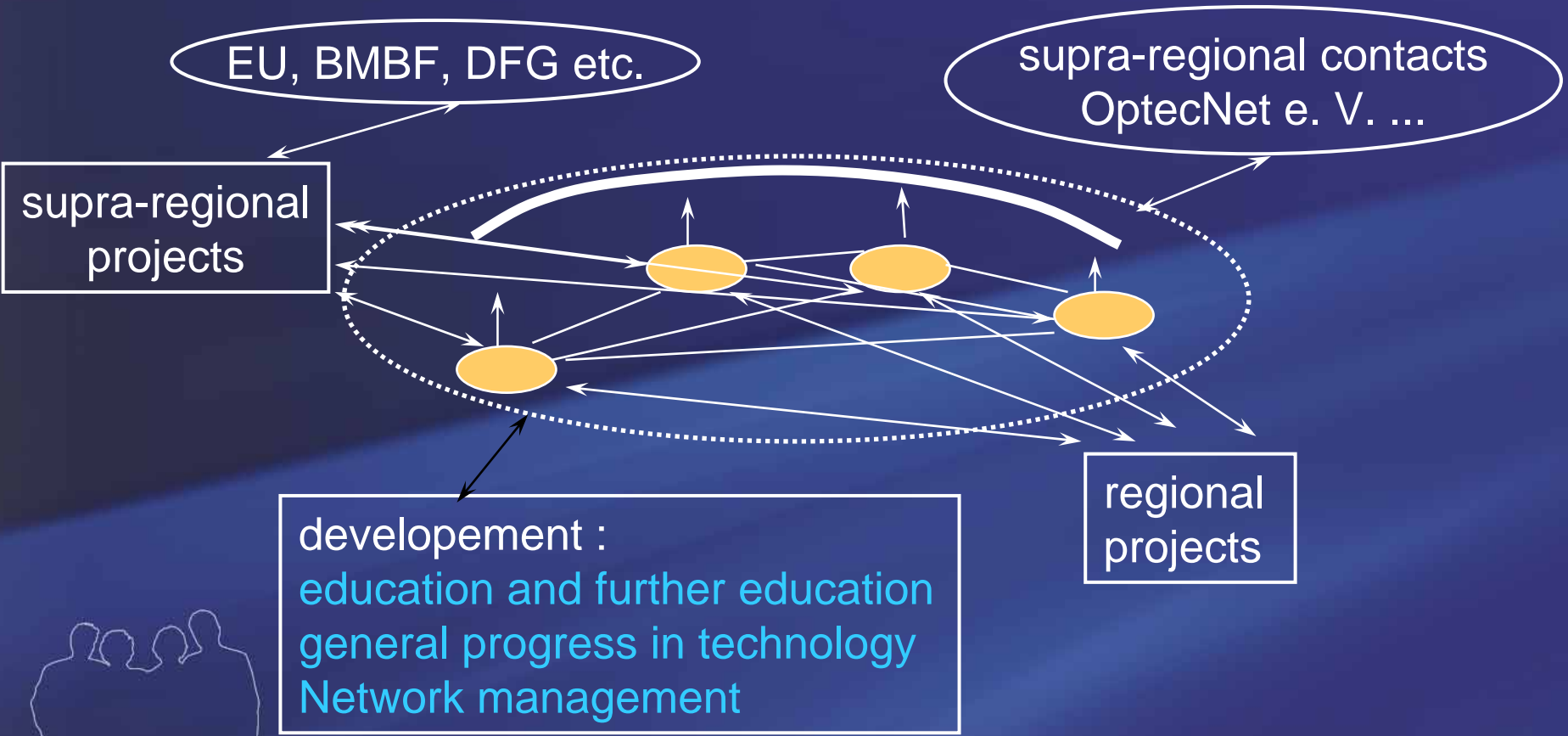
Rudower Chaussee 25
12 489 Berlin (Adlershof)

Tel.: ++49 (30) 63 92 17 20
Fax: ++49 (30) 63 92 17 29
eMail: weidener@optecbb.de

OpTec Berlin-Brandenburg
e.V.
Optische Technologien
aus Berlin und Brandenburg



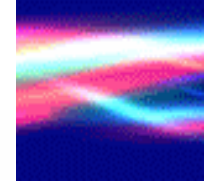
OpTecBB- horizontal networking



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Optical Technologies – Examples of the Region



latest digital cameras and image processing of the DLR



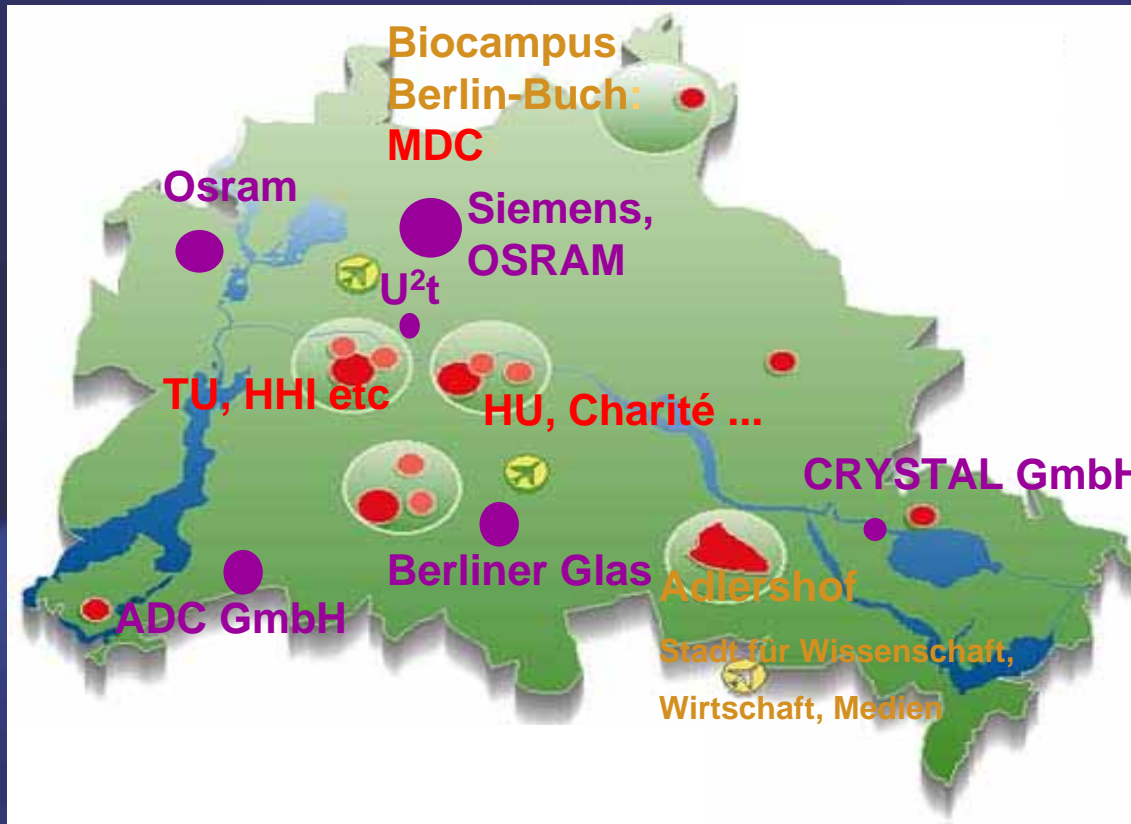
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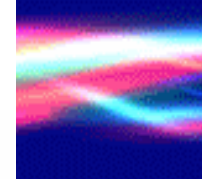
OpTecBB- members in the Berlin area



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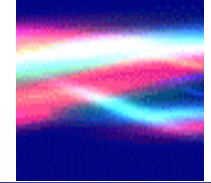


Berlin Adlershof- an important site for optical research and innovative start-ups



City for Science Technology and Media

Optische Technologien aus Berlin und Brandenburg



Optical technologies - sites in the Berlin-Brandenburg region

Rathenow

Potsdam-Golm

Teltow

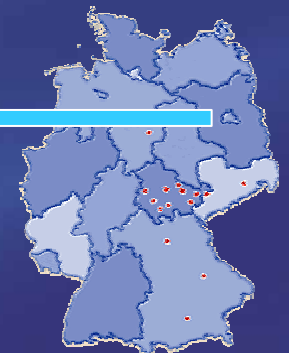
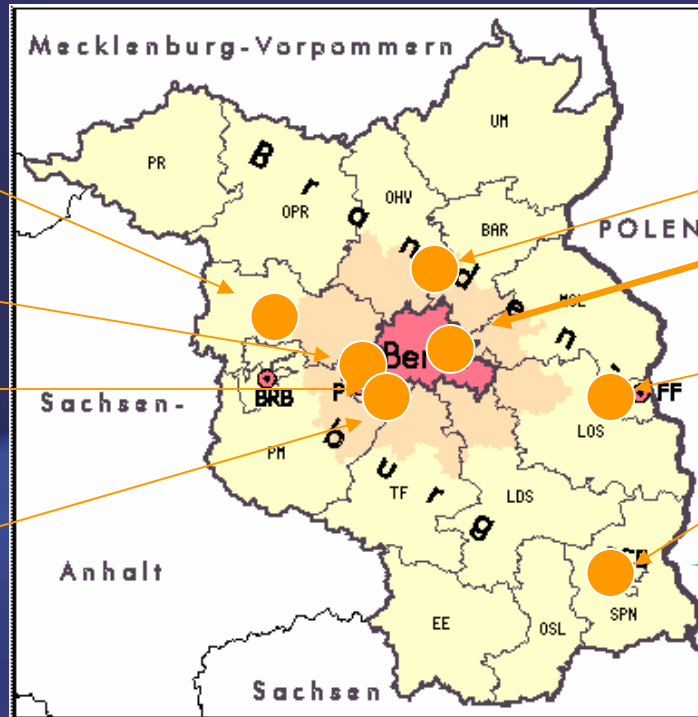
Stahnsdorf

Hennigsdorf

Berlin

Frankfurt/ Oder

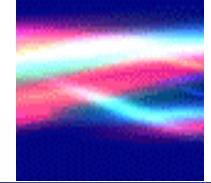
Cottbus, TU



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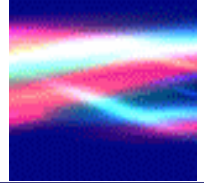


Engagement for the region: e.g. Innovation Forum in Rathenow

NEUE PERSPEKTIVEN DER OPTIK-INDUSTRIE



Optische Technologien aus Berlin und Brandenburg



International marketing for the region

- Berlin-Events (jointly with WISTA, WFBI, TSB) : San José, Straßburg, Ottawa

