

Global Photonic Market

Dr. Ch. Harder

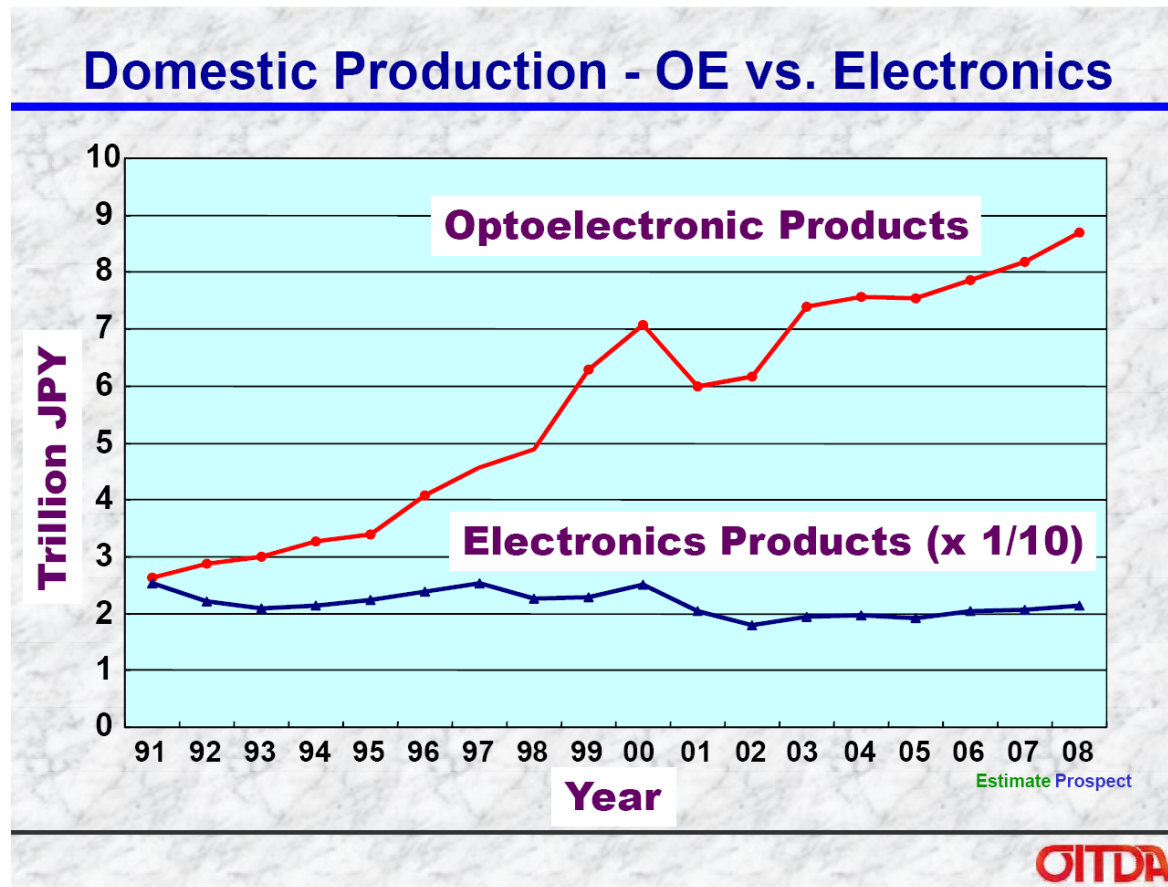
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Global Photonic Market

- Photonics is a growth market
- Photonic Market Sectors
 1. Display
 2. I/O equipment/Optical storage
 3. Communication
 4. Material processing
 5. Lighting
 6. Photovoltaic
- Data from the following organisations are acknowledged:
 - OITDA, OIDA, EPIC, SIL2009, Optech-Net
- Distribution is limited

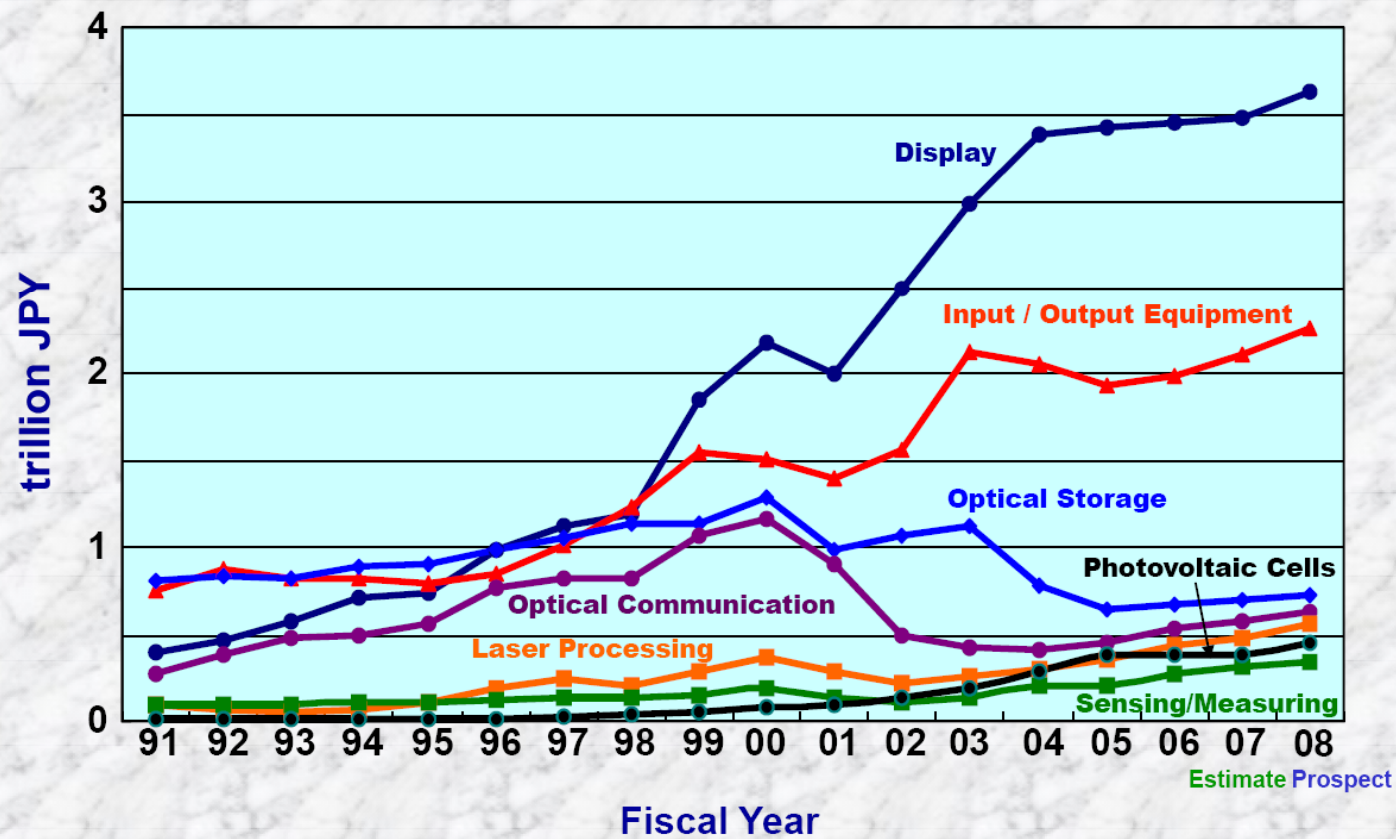
Photonics: Growth Market



Data for Japan domestic production of electronic and optoelectronic products

Photonics: Segmentation

Domestic OE Products Trends by Field



Displays

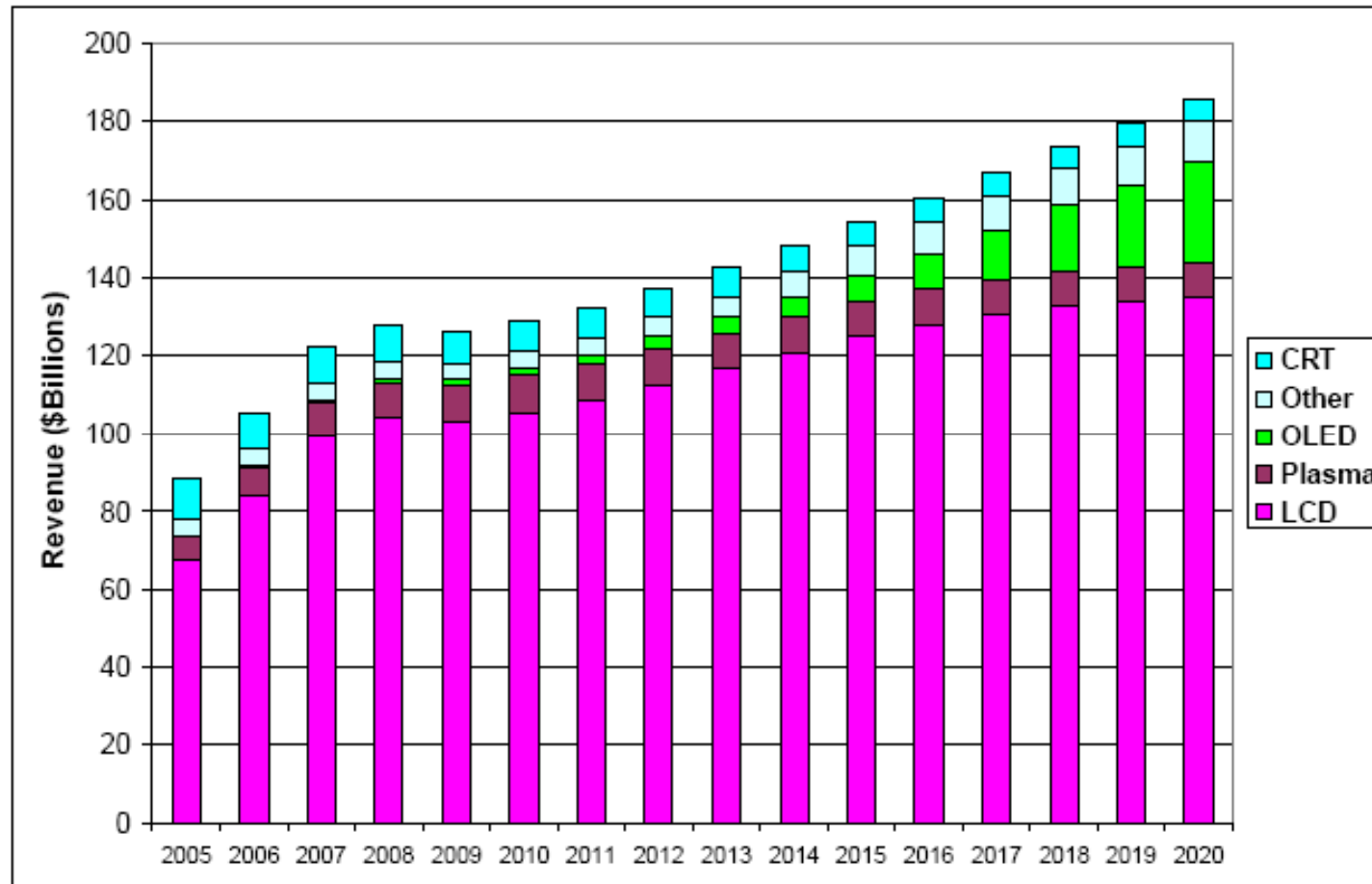
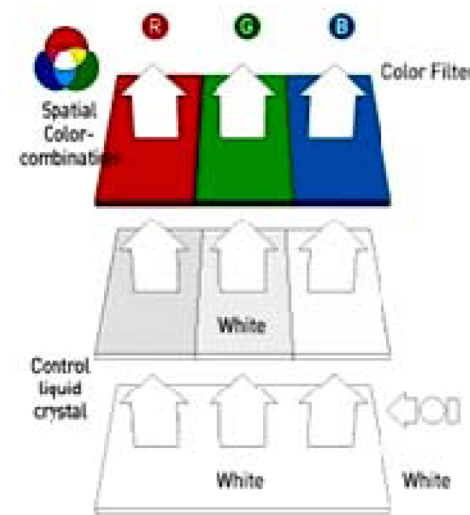
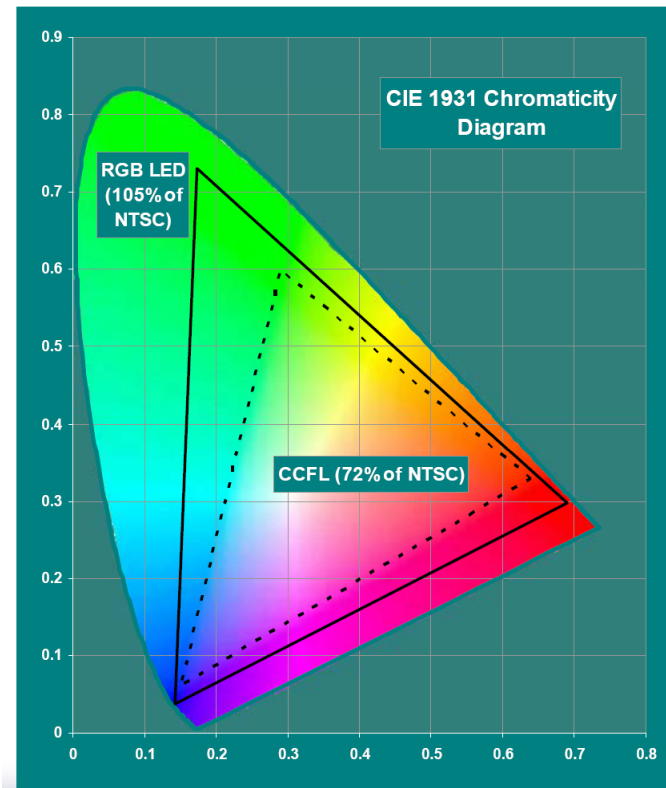


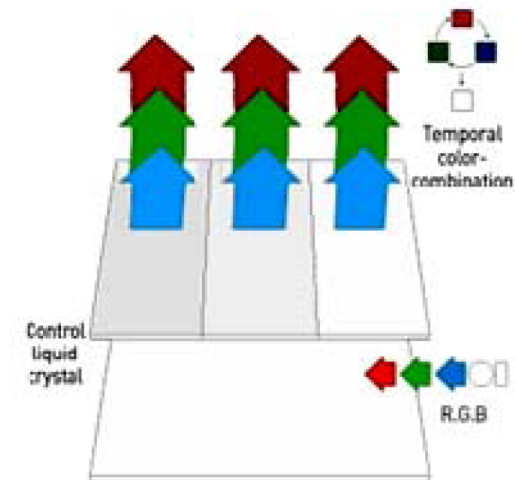
Figure 4.8: Global Flat Panel Display Market, 2005-2020

Sources: OIDA, DisplaySearch, iSuppli, Displaybank

LCD Displays with LED Backlighting



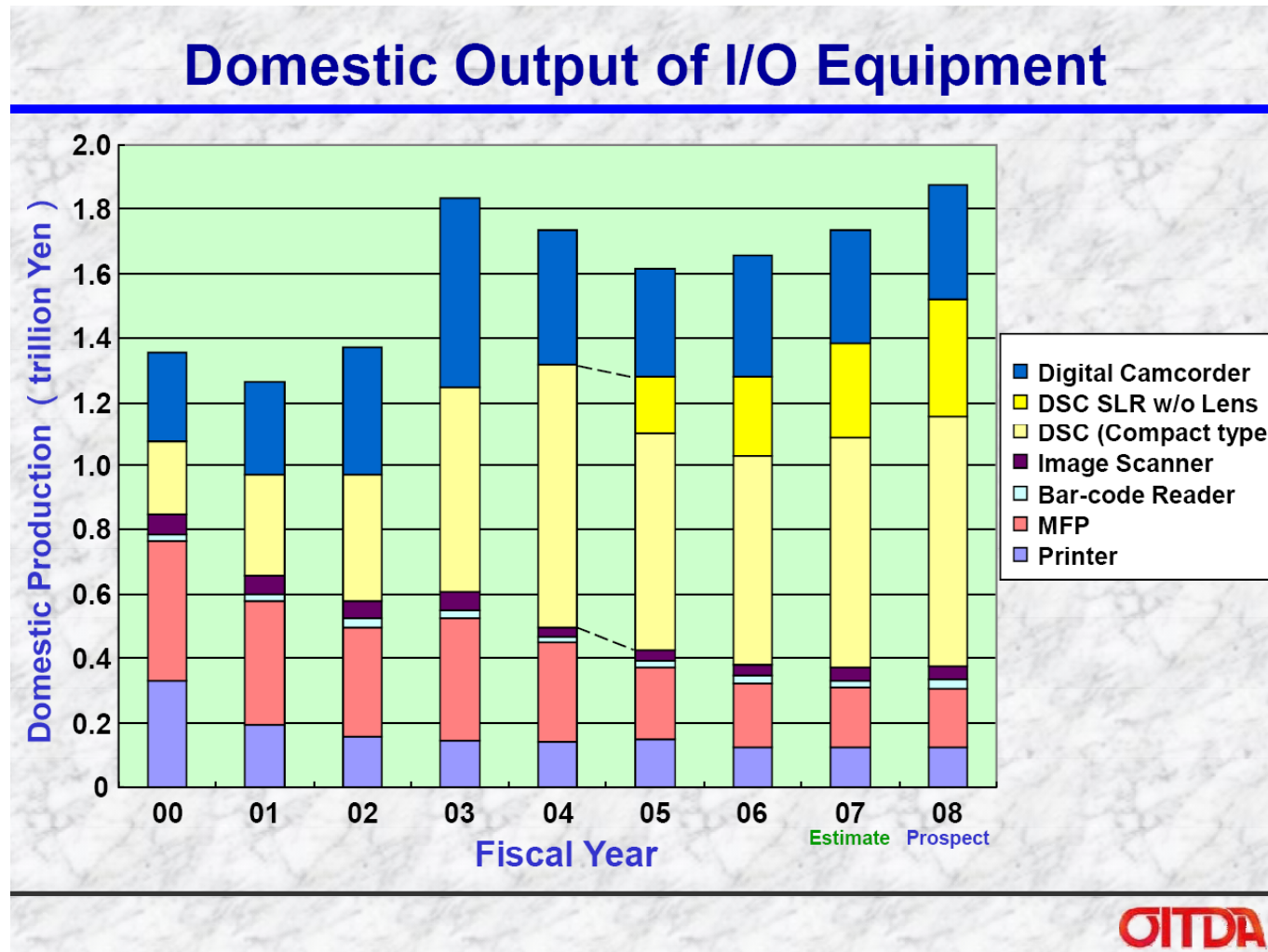
a) Conventional design with RGB color filters



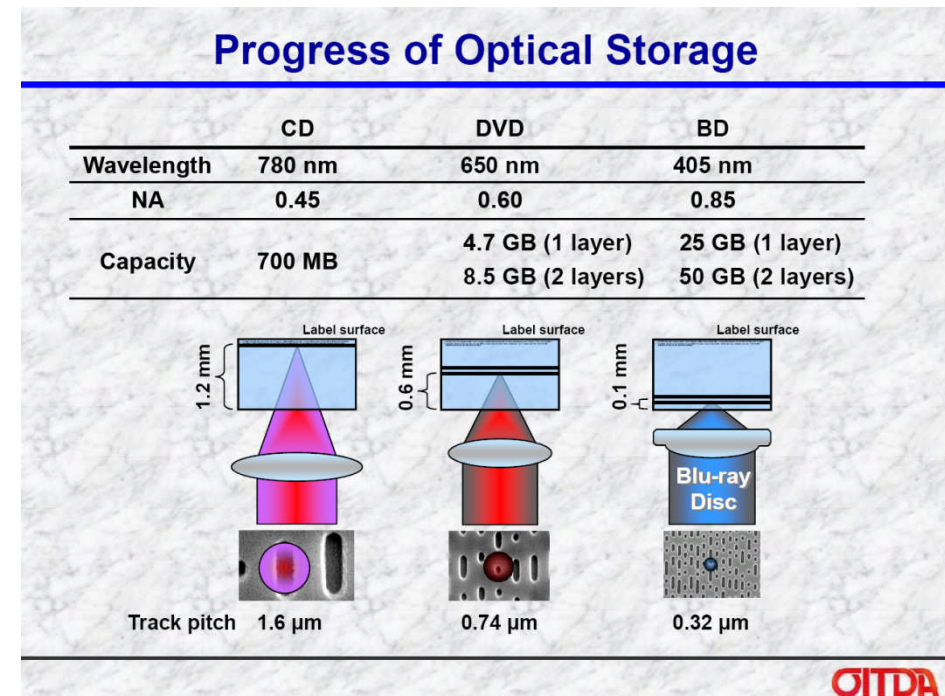
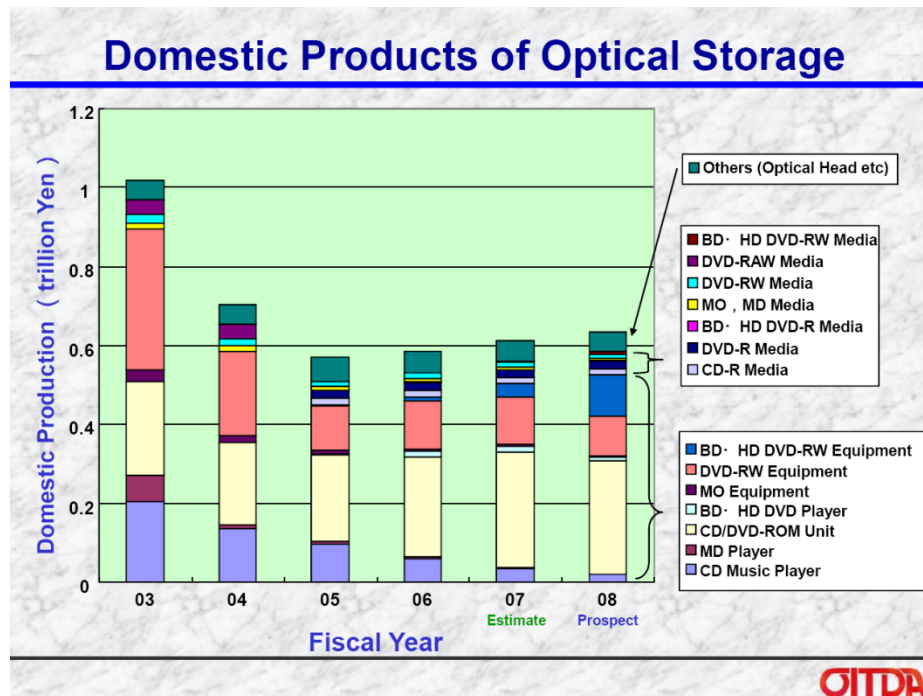
b) Color sequential design

- LCD with LED backlighting: Improved color gamut
- Color sequential technology: Reduced power consumption (factor of 3)
- Courtesy SIL2009

I/O Equipment



Optical storage



- Optical storage technology is threatened by magnetic storage and flash memories

Communication

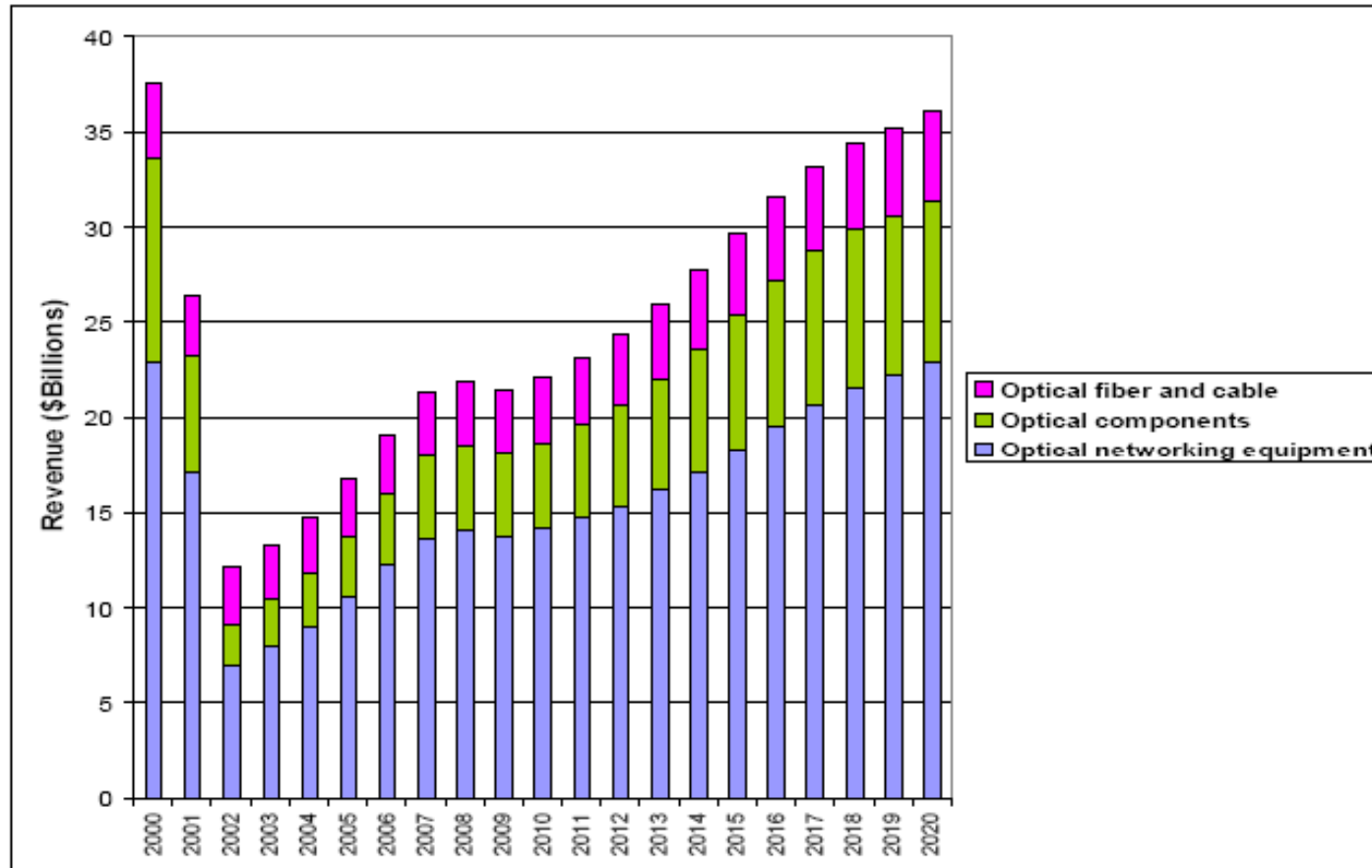


Figure 6.3: Global Optical Communications Revenue and Forecast by Segment, 2000-2020

Sources: TIA, Ovum-RHK, Infonetics Research, IDC, CIR, Gartner, KMI, Dell'Oro, Aventis, OIDA estimates, OIDA member companies

Communication

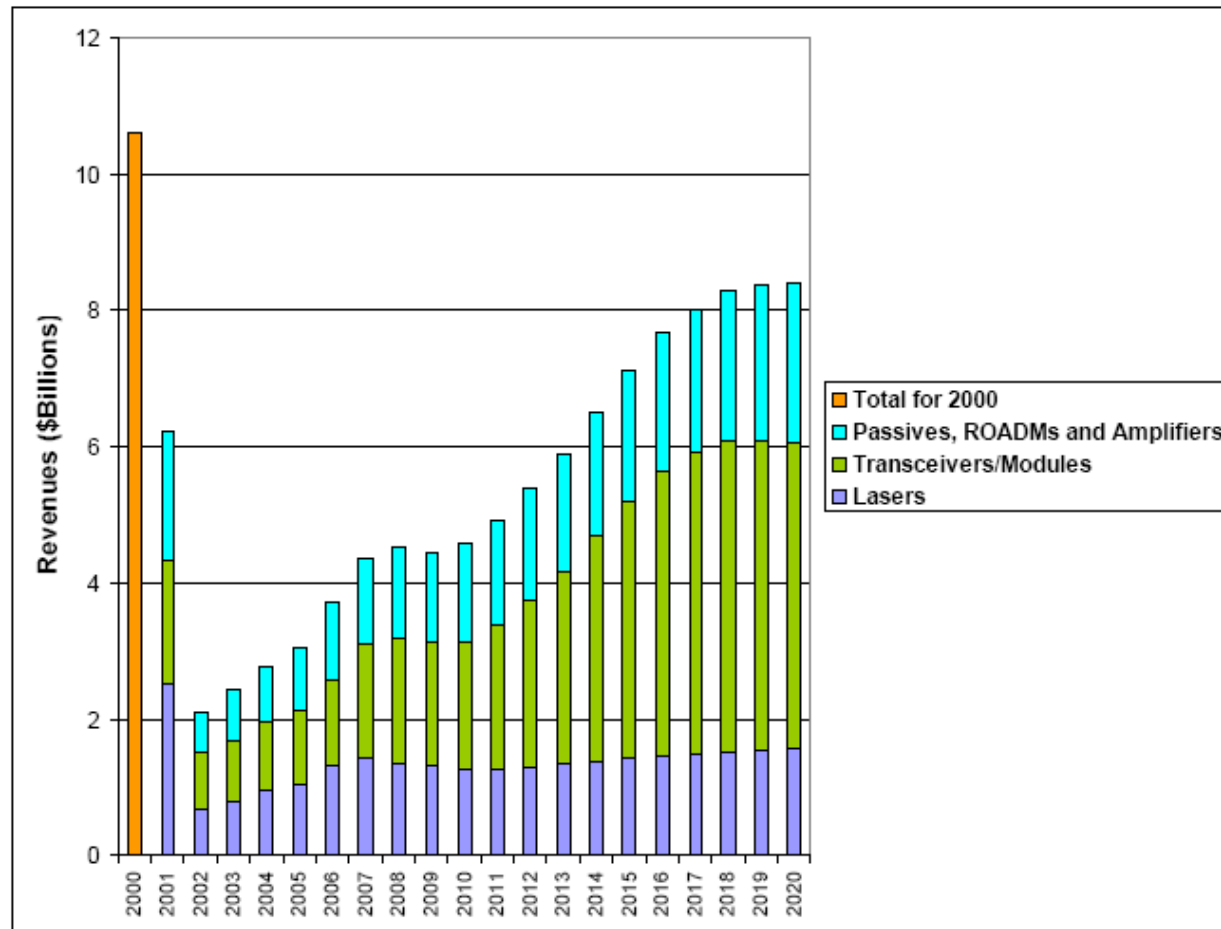


Figure 6.14: Components for Telecom and Datacom: Revenue and Forecast, 2000-2020

Sources: OIDA member companies, KMI, Ovum-RHK, Laser Focus World, LightCounting, iSuppli, TIA, IDC, CIR, Gartner, Dell'Oro, PIDA, OITDA, OIDA estimates

Material Processing

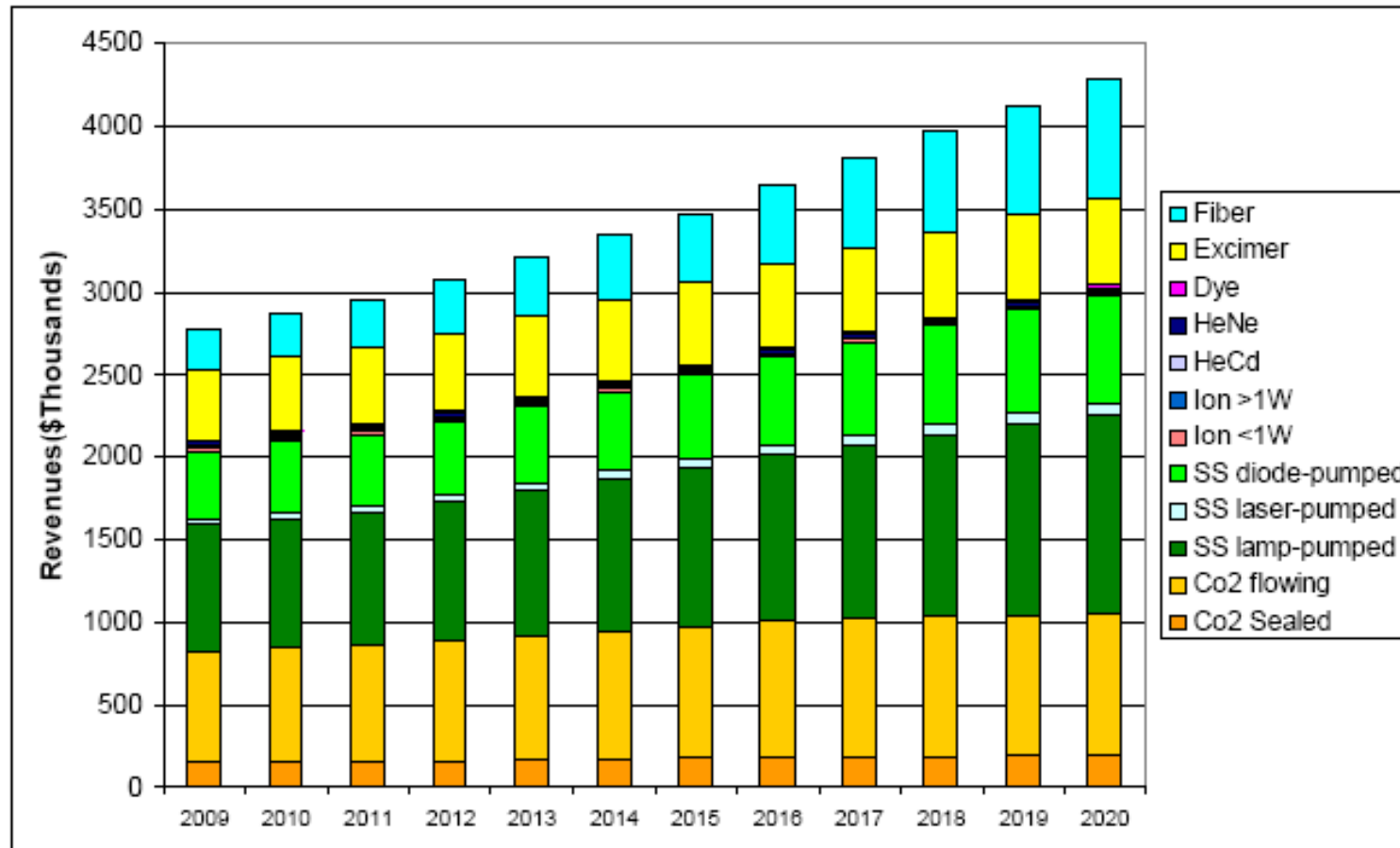
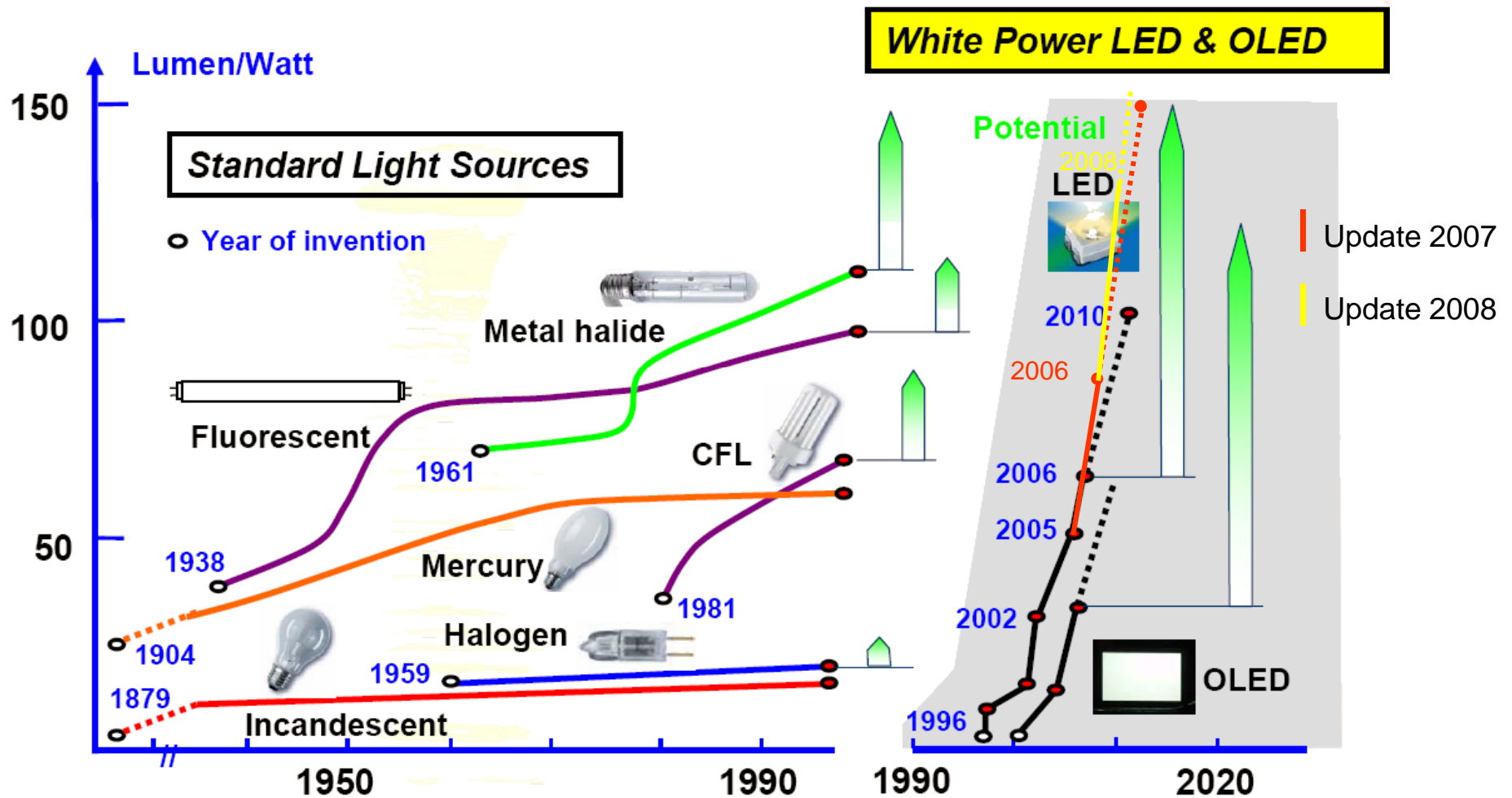


Figure 2.12: Nondiode Laser Revenue Forecast by Type, 2009-2020

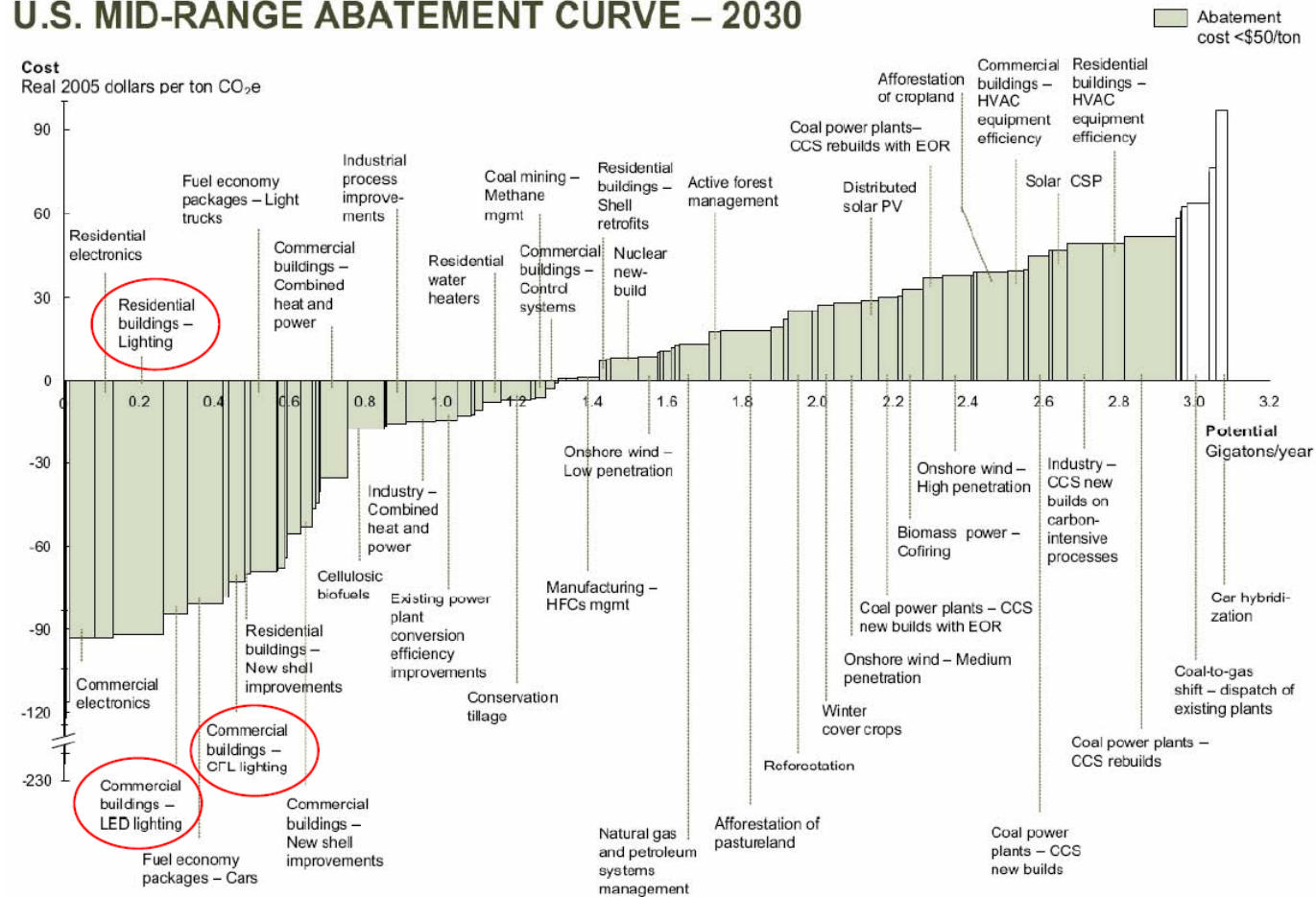
Sources: IOA, Laser Focus World, OIDA, OIDA members

Lighting



McKinsey Emissions Abatement Curve

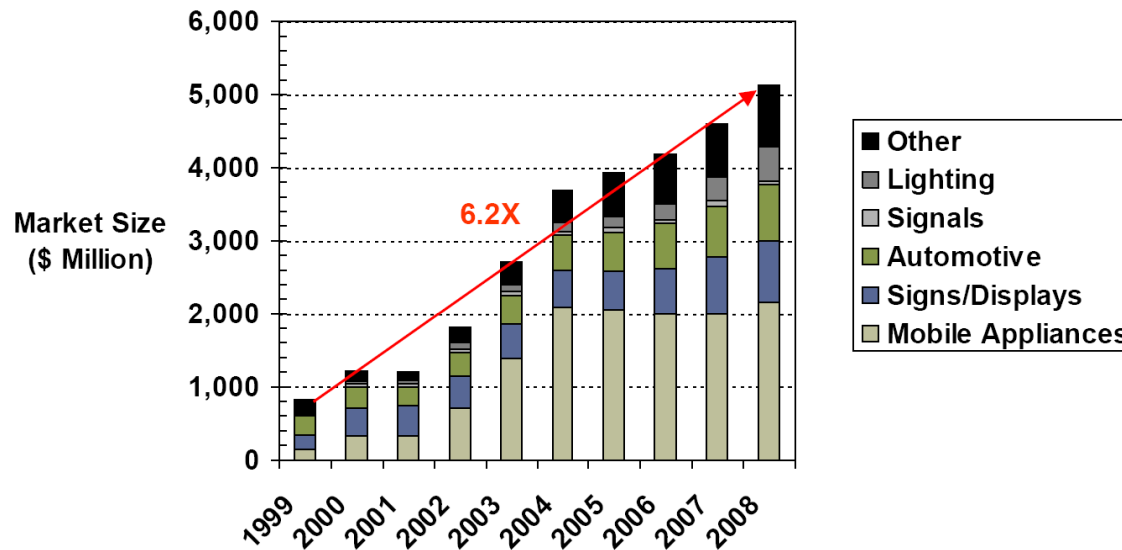
U.S. MID-RANGE ABATEMENT CURVE – 2030



Source: McKinsey analysis

Lighting

HB LED Market History

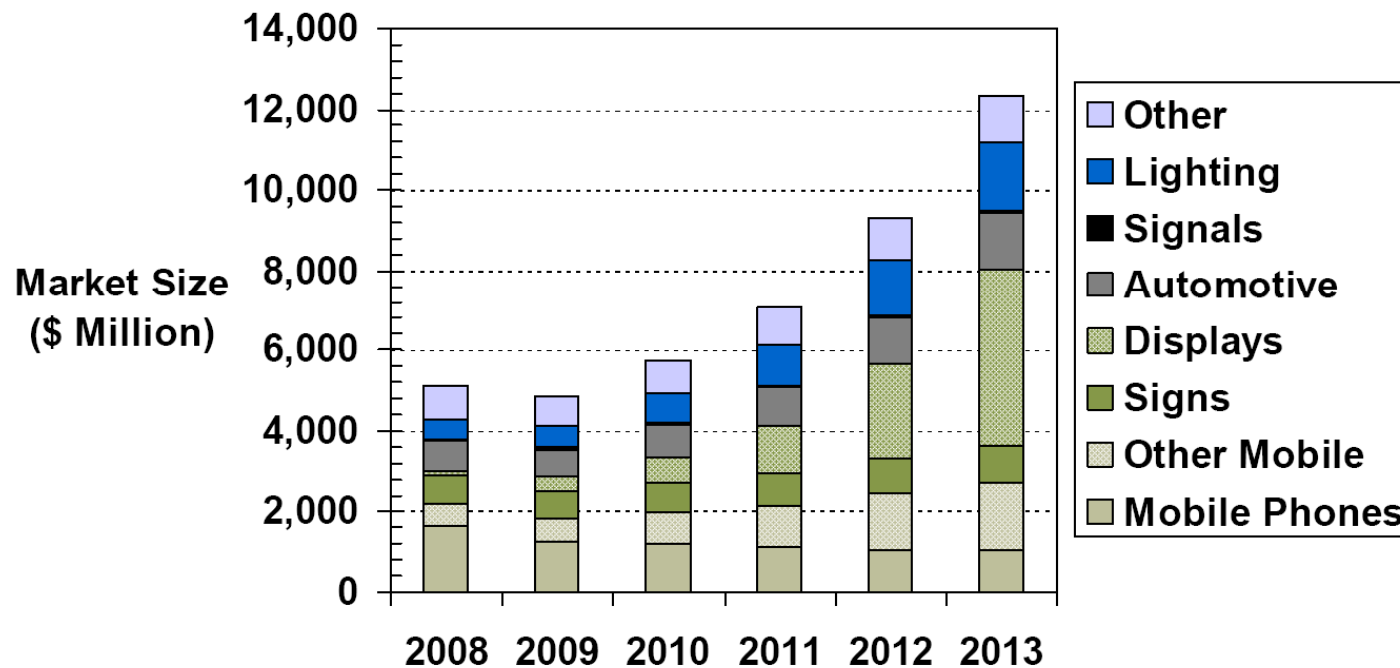


Strategies in Light
The Leading Event for the Global LED Industry

- Haitz' law: Price per lumen decreases by factor of 10 every decade.
 - Law was valid for last 40 years. How long will it continue?

Lighting

HB LED Market Forecast 2009-2013



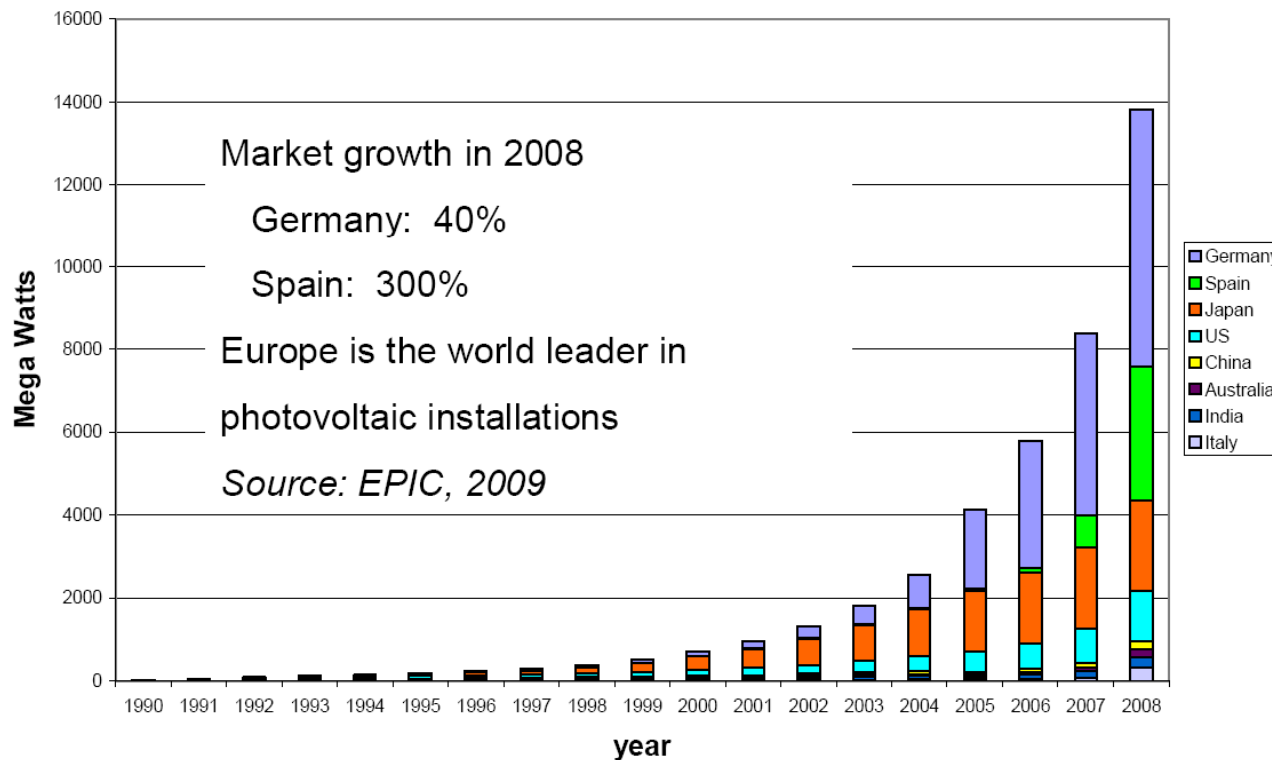
Strategies in Light

The Leading Event for the Global LED Industry

Photovoltaics

2008 Market data

Cumulative installed power = 14 Giga watts



EPIC, The European Photonics Industry Consortium

Global Photonic Market

- Photonic Market is a growth market
 - Display technology is the dominant sector
 - Solid state LEDs and LDs will increase their market share for light sources because of low power consumption and high reliability
 - Performance of LED technology is expected to continue according to Haitz' law
 - Photovoltaics is dominantly deployed in Europe and it remains to be seen how it will spread
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