

# The LCD TV Assoc. & TV market, intro & outlook, and some new directions?



*Bruce Berkoff, Chairman*

**LCDTV**  
Association

Inform • Promote • Improve • Connect

*Nagasaki, Japan: GFPC April 2007*

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*A great TV in every room!*



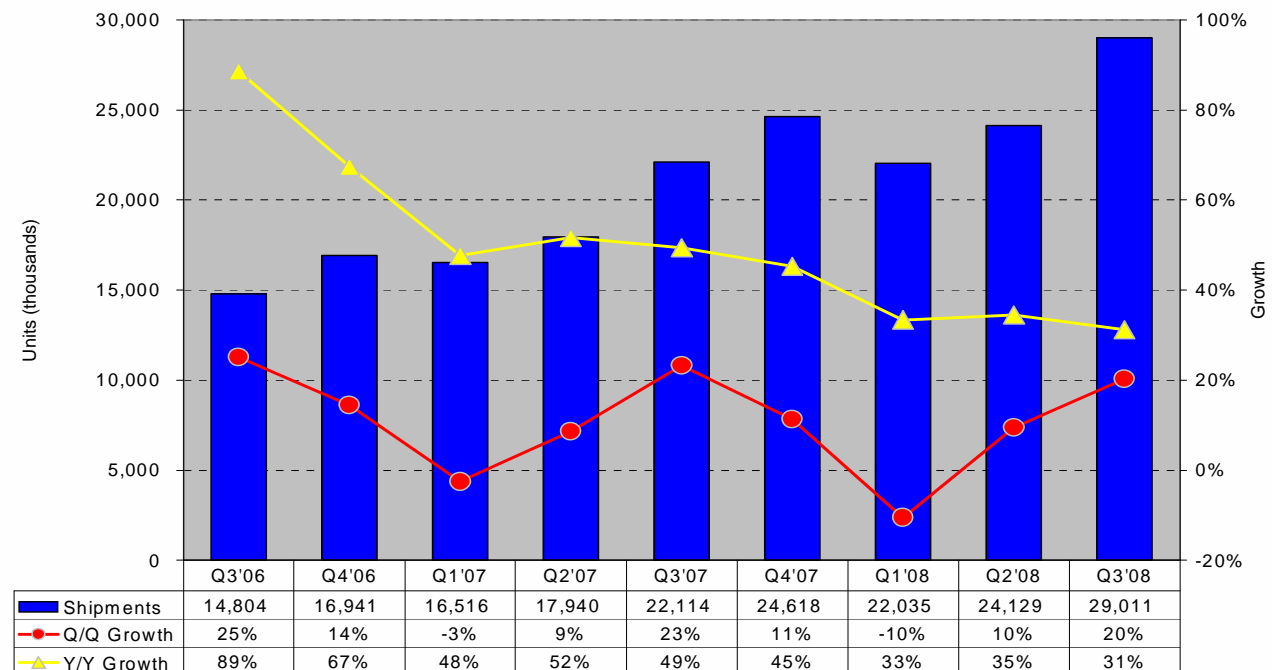
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# LCD TV Units (thousands), big growth!

- LCD shipments for TV rose at a CAGR of 118% Q3'04–Q3'06, and is forecasted at a CAGR of 40% Q3'06–Q3'08. Shipments appear to be growing linearly.



Source: Recent DisplaySearch Presentation

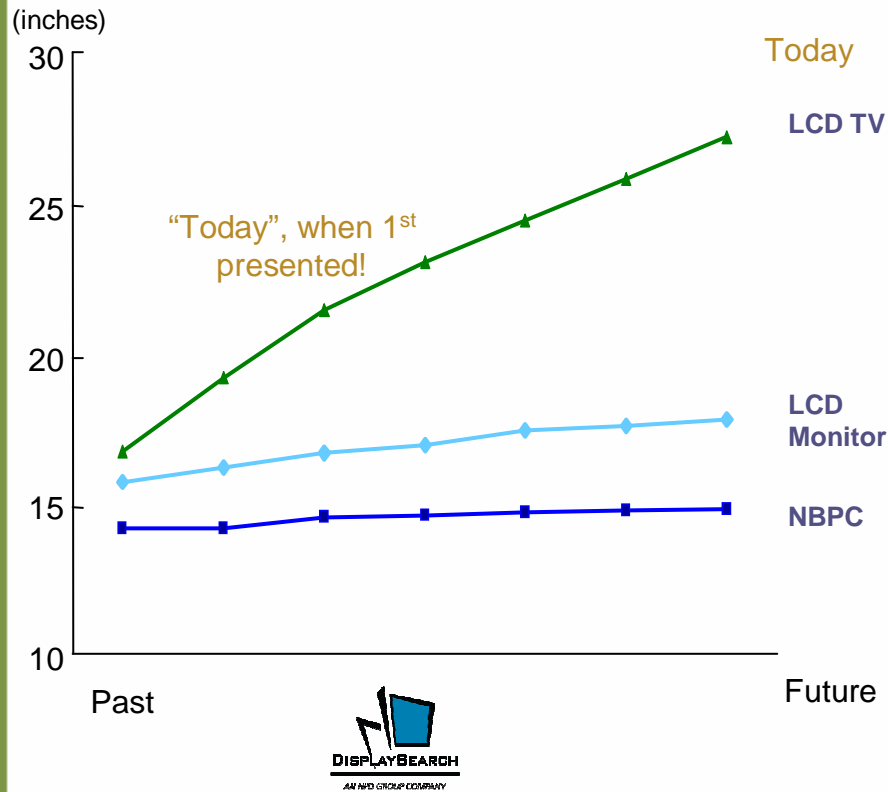


# LCD Average Size is Growing, Especially for TVs

More glass per person has been coming, as we predicted 5 years ago!

Large a-Si TFT-LCD average size (10" and above)

LPL's 55W LCD panel next to a 15" LCD panel, almost 12x in area



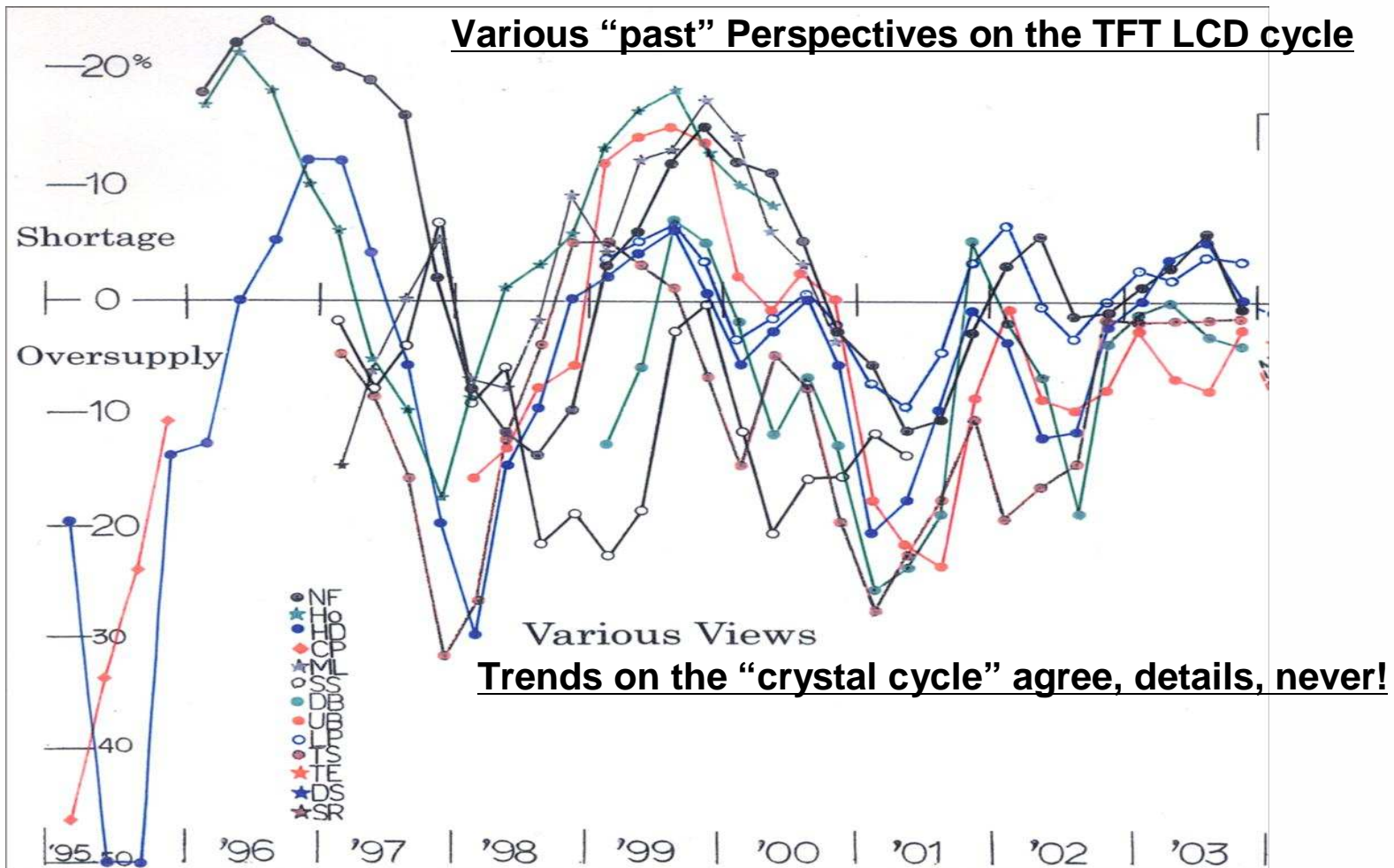
This 55" LCD is almost 12x the area of a 15" XGA monitor panel, and is almost ~7x the resolution and ~7x the area of a 20" VGA TV

Source: DisplaySearch Quarterly DT MNT Shipment & Forecast Q1 '05  
 DisplaySearch Q1 '05, private communication (NBPC)  
 DisplaySearch US FPD Conference 2005 (TV)



# Numbers Always Vary...even the Past ! (esp. in displays)

- It may be undesirable to depend on a small number of views because the views deviate so much, even about the past.... So how can people forecast the future?



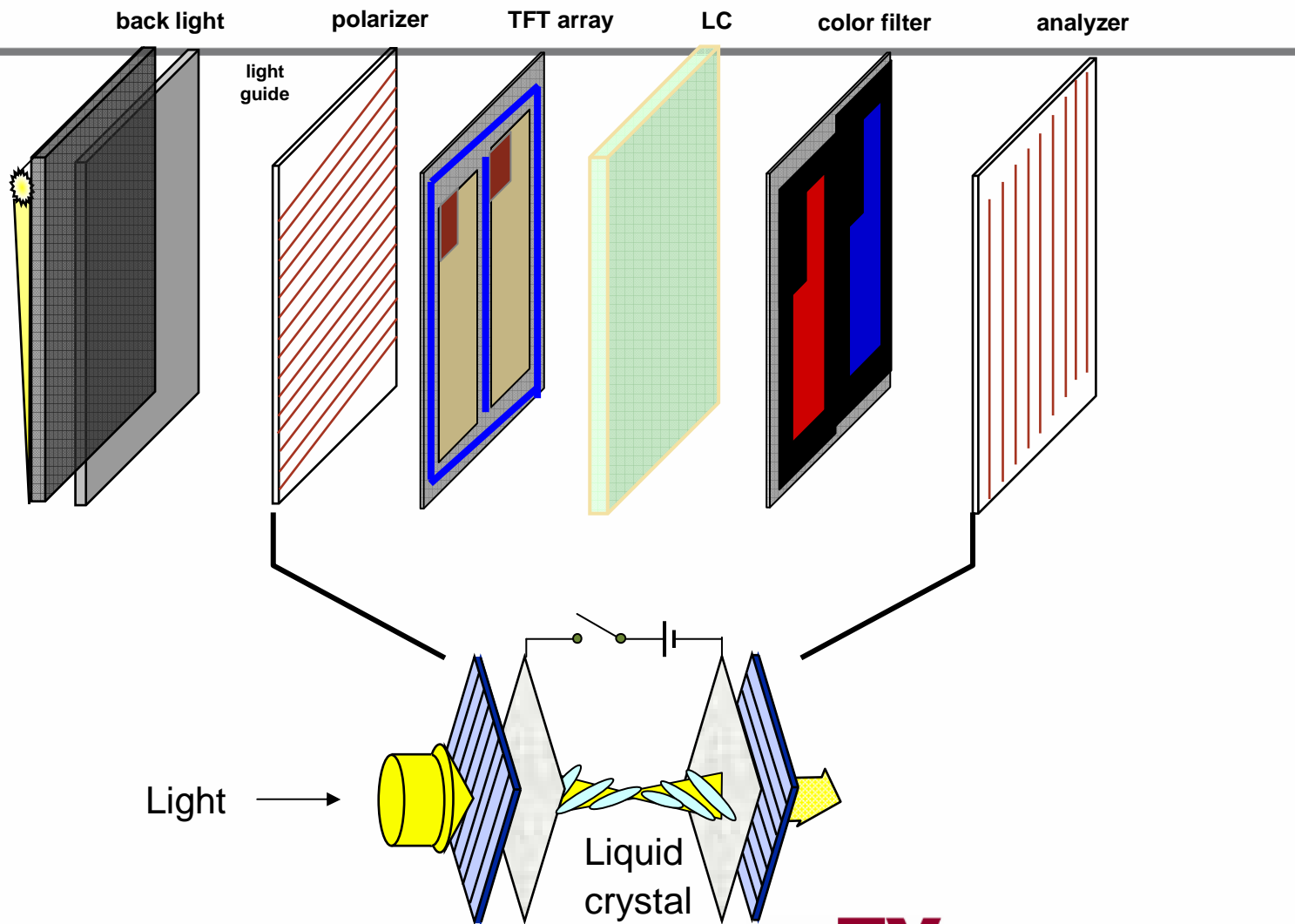
Source: Japanese Analyst W Q4 '03, for LPL CMO

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# TFT-LCD Structure – a big shutter (inefficient), & each layer is more complex and costly than the entire CRT it replaces!



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# The Display Industry can be tough...

note “Berkoff’s rule”

**The Display Industry...**, easy to make a small fortune, but most start with a large one and work their way down...

Often companies, especially start ups, forget **“Berkoff’s rule”**, which states:

**“Science always loses to Engineering,  
Engineering always loses to Economics,  
&  
Economics always loses to Politics”**



look at RPTV-> PDP-> LCD!  
or , Zero Billion \$ Markets e.g., OLEDs

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# The LCD TV Association:

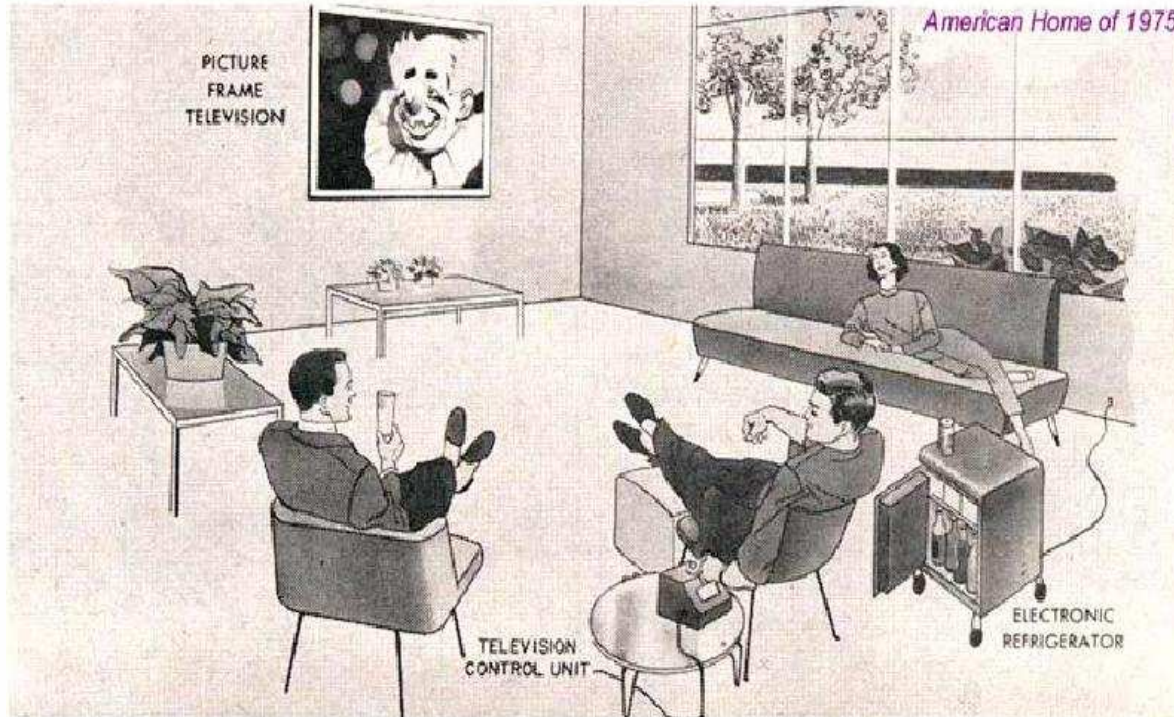
## *Inform, Promote, Improve, Connect*

- We will **Inform** the public on the many benefits of LCD technology
- The LCD TV Association will **Promote** the industry and technology via speeches, debates, interviews, PR, white papers and research
- We will help **Improve** the product features and functions, by inventing and promoting new specifications and features (e.g. Green TV: for ambient light sensing and backlight power lowering, a TV with better ergonomics, energy use, etc.)
- The LCD TV Association serves to **Connect** the industry supply chain, via our web site, publications and research, as well as face-to-face meetings, newsletters, etc. (*Sustaining Members* meet on *Advisory Board* too, to set priorities, direction, etc.)



# The 50-yr old dream of a “hanging” TV is enabled by LCDs ( A Great “WAF” .....

Picture frame TV, electronic refrigeration and remote electronic controls illustrated in this RCA sketch of the American living room of 1975 are just a few of the amazing devices which will provide conveniences for the consumer, and servicing opportunities for qualified technicians. During the coming years, and even effective in many areas today, the rapidly growing use of communications and electronic control equipment in industry will offer many attractions.



Flat-Screen TV Prediction in 1955

They got lazy American males right... (remote & fridge needed), but missed 2 big TV things... aspect ratio, and wireless (also a HIGH WAF!!), audio next...

TECHNICIAN • October, 1955

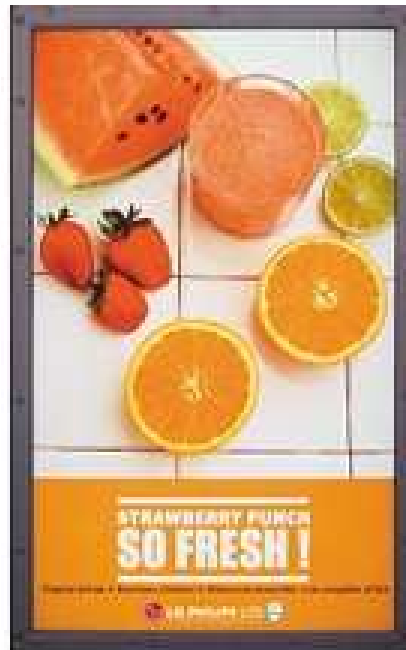
\* Source: iSuppli/Standford Resources, courtesy of Paul Semenza



# Many LCD Applications are coming, beyond great flat TVs!



Portable DVD/Video Players



Portrait Advertisements



Rear-seat Automotive Entertainment



Portable Gaming Devices



Universal Remotes



Medical

# From large and wide to many wide displays.... Multi-tasking Really Takes Off with Multiple Displays!

Multiple displays have applications in homes, offices, stores, hotels, etc.

Open an e-mail on one screen, while searching the web on another!

## Multiple Applications on Multiple Displays!

30" Wide HD Monitor

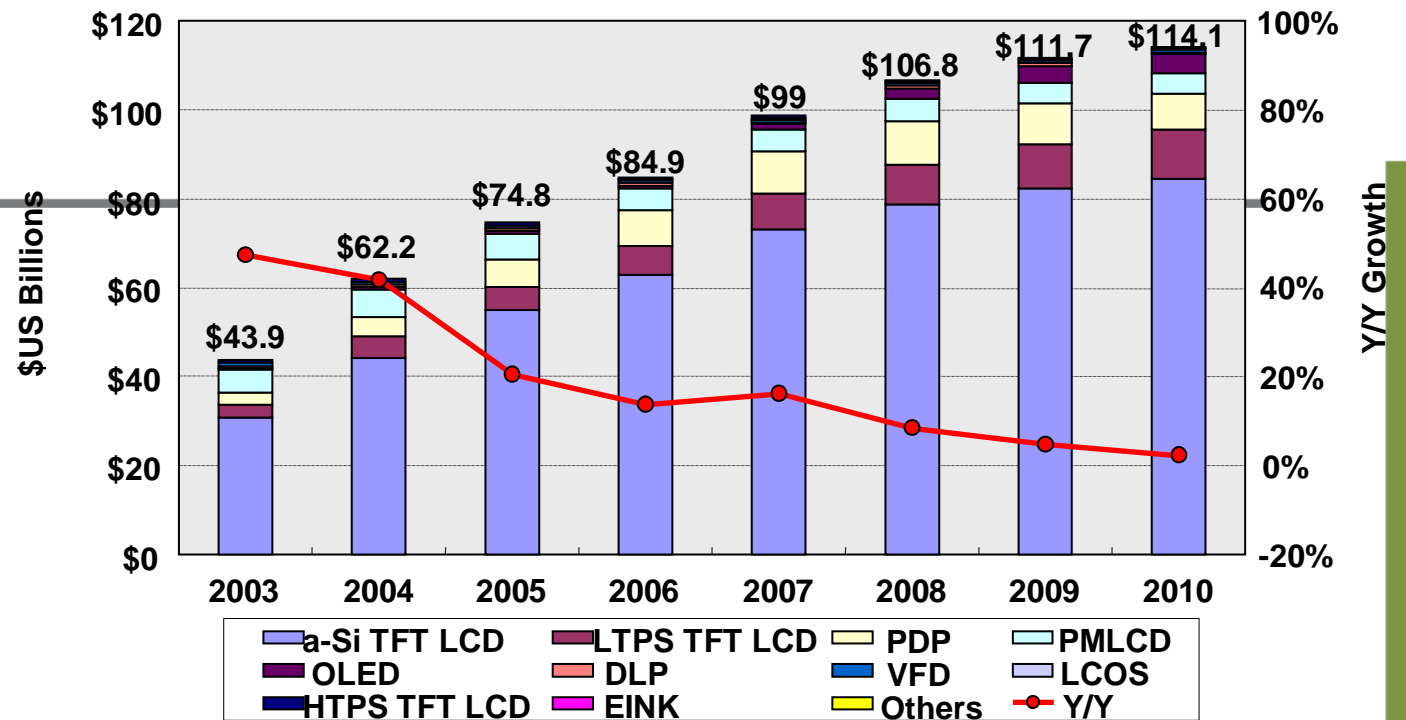


- Get more work done at once
- Faster ROI (return on investment)
- More information and nicer view on a larger work space

Source: [www.tigerdisplays.com](http://www.tigerdisplays.com)

# Global FPD Market Close to 100 Billion USD in 2007, new products, & markets, will develop...

\* Source: DisplaySearch Q2'06 Worldwide FPD Forecast Report



PIP to POP:  
Picture "out of"  
picture will  
become more  
common, too



As might a  
"mirror" TV,  
and other  
design  
elements

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# A great problem (trend?) to shoot for..... Is it a TV, or Window? (someday both!!!)

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*"It's not high-definition anything. It's a window."*

*&, of course the goal: "A great flat TV in every room!!!"*



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