

# IP Strategies for the Next Decade

## Role of IP in a Maturing Display Market

January 2011

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# Outline of Presentation

**Display Market Trends**

**New IP Players and Strategies**

**Monetization Paths and Expectations**

**Non Practicing Entities**

# Display Market Mega-Trends

Flat panel maturation looms

LCD dominance

Continuing Consolidation of Players

Focus on cost down and production scale

# Symptoms of Maturation

- **US TV unit growth stalls in 2010; revenue down**
  - Is it the economy or is there a big screen in every home?
- **Flat panel players wither to the Big 5**
  - Hard to believe that Sharp is the only player left standing in Japan
- **Supply chains narrow with consolidation and integration**
- **New technologies struggle for niche roll**
  - Plasma big screens survive
  - OLEDs remain a long term dream
  - eBook technologies vie for acceptance as window closes

# Incredible Pace of LCD Innovation Continues

- **Continuous improvements in video quality**
  - Contrast, black level, color gamut
- **Constant cost down of >10% per year**
  - Ever larger panels with higher definition
  - Higher resolution images in smaller sizes
- **Improved ergonomics and user friendliness**
  - Touch screens and enhanced graphical interfaces
- **Wide spectrum of sizes and performance**

# Competition Shifts to New Features

- **Lower Power Consumption**
  - LED Backlights
  - Dynamic Contrast and Local Dimming
- **3D fails to sustain big screen growth in 2010**
  - 240 Hz frame rate; fast switching makes shutter glasses a standard
  - LGE and others continue to promote patterned micropolarizers
  - Autostereo remains a dream
- **Flexible Displays**
  - Technology push fails to gain tractions

# Quest for Alternative Technologies

- **OLED**
  - Allure of simple display structure and potential lower costs
  - Stable and reliable materials and processes prove difficult
- **eBooks**
  - Will consumers opt for Kindle or iPad in the long term
  - Full color video or monochrome?
- **Long and Risky Path to Commercialize New Displays**
  - Both eInk and OLED approach 20 years of development
  - Many other simpler technologies continue to struggle
    - 3D, Micropol, haptics, personal displays, HUDs, etc. etc.

# Display IP Players and Strategies

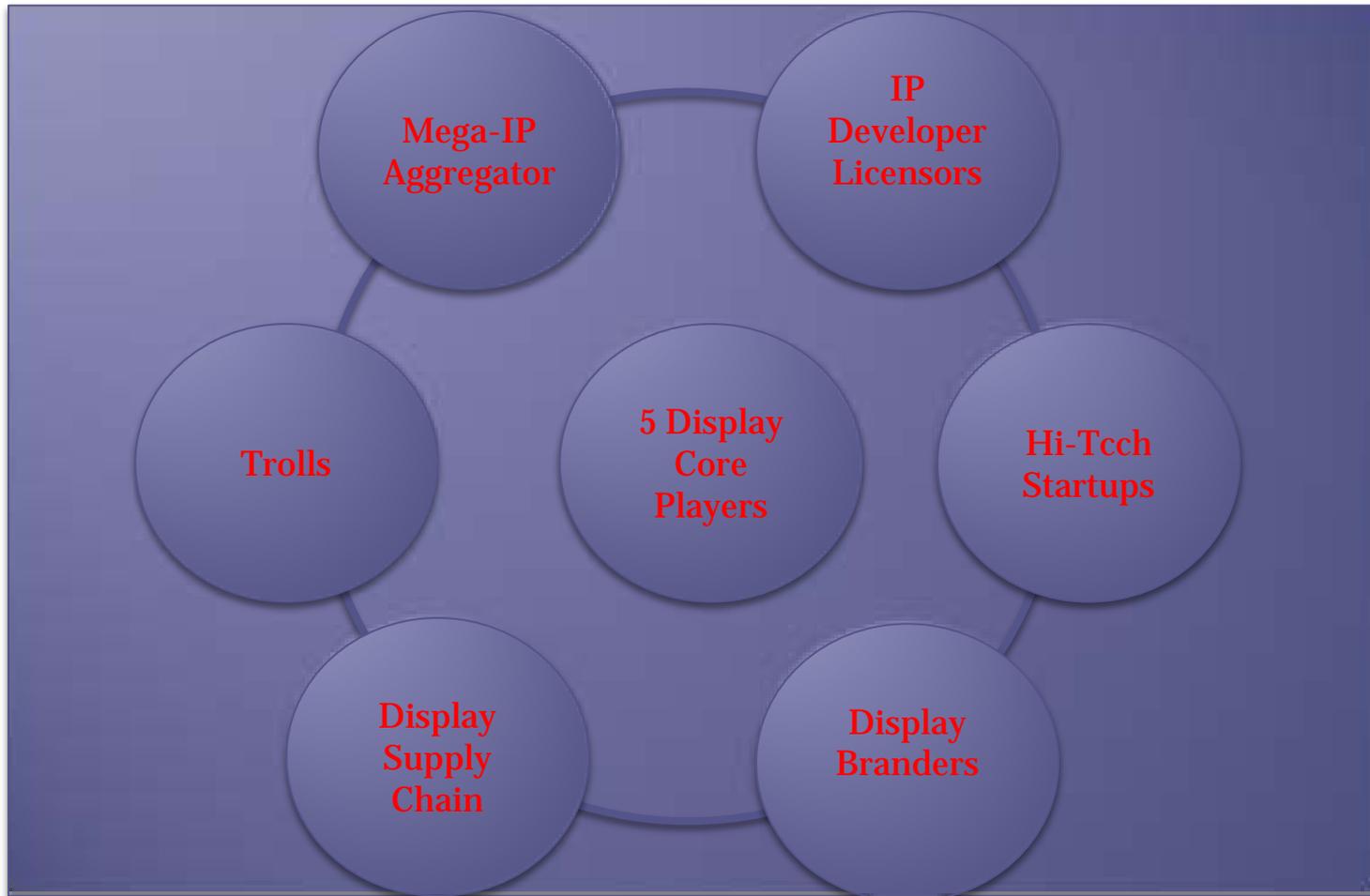
The IP Landscape

Major Players

# Classes of Players and New Middle Men

- **Research and development from an array of sources**
  - Five major LCD manufacturers dominate cost down IP
  - Tens of LCD supply chain companies
  - R&D companies develop technology for licensing
  - Universities and Research Institutes foster innovation
  - Start up companies and inventors in pursue breakthroughs
- **IP middle men acquire portfolios of patents**
  - Strategies range from licensing to assertion
  - New business strategies include defensive IP collaborations

# IP Landscape Segments



# Display Core Companies, the Big 5

-  **SAMSUNG**
  - Leading TV brand with full spectrum of LCD production capability
-  **LG Display**
  - Top LCD technology developer and leader across the size spectrum
- **SHARP.**
  - Top TV and mobile LCD producer with WW brand recognition
-  **AUO**
  - Number 1 display technology and production company in Taiwan
- **CHIMEI INNOLUX**
  - Merger gives CMI scale and reach to achieve core company status

# Leading Display Tech/Manufacturing Companies

- **Other LCD Technology and Manufacturing**
  - Epson, TMD, Other smaller Asian companies, Emerging Chinese players
- **Major Supply Chain Companies**
  - Corning, Asahi, DNP, Toppan, 3M, FujiFilm, Sumitomo, Nitto Denko, SKC, Toray, Teijin, Merck, Chisso, Applied Materials

# Leading Brander Technology Companies

- **TV and Gaming Set Branders**
  - Sony, Toshiba, Microsoft, Nintendo
- **Monitor, and Notebook Branders**
  - Apple, Toshiba, HP, Dell, Asus
- **Cell Phone, Smart Phone, and Mobile Branders**
  - Apple, Google, RIM, Nokia, HTC, Motorola, LGE, Samsung, Sony

# IP Mega Aggregators

<b>Company</b>	<b>Founded</b>	<b>Patents</b>	<b>Key Partners</b>
Intellectual Venture Partners	2000	30,000	Intel, Microsoft, Nokia, Sony
Allied Security Trust	2007	22 Patent Families	Cisco, HP, Google, Ericsson, Verizon, IBM, Intel, Moto, RIM, Philips
Open Innovation Network	2007	Linux	IBM, NEC, Sony, Philips
RXP	2008	1,300	IBM, Cisco, Epson, LGE, Panasonic, Sony, HP, InFocus, Sharp,
Round Rock Research	2010	4,500	Micron

# Display Technology Developers/Licensors

Company	Primary Technology	Display Technology	Sales (\$M)
 QUALCOMM	Cell chipsets	IMOD MEMS	\$10,780M
 DOLBY	Audio, Cinema	Local Dimming	\$720M
 Rambus	Bus Interface Solutions	LED Lighting	\$247M
 immersion.	Haptics	User Interface	\$29M
RealD	Cinema 3D	Consumer 3D	
 SEL SEMICONDUCTOR ENERGY LABORATORY	IC, Solar,	CGS, OLED, Flex	≈\$500M

# Universities and Research Institutes

- **US Universities**

- Kent State LC Institute, Univ of Central Florida, Univ of Colorado, UCLA, Brown
- Flex Display Center of Arizona State Univ.

- **European Institutions**

- Fraunhofer: HHI, IPMS, IAO, IOF
- Ghent
- Russia

# Monetization Paths

**Licensing, Sale, and Litigation Paths**

**Factors That Determine IP Value**

**Realistic Expectations**

# Paths for Non-Practicing Inventors

- **Licensing**
  - Requires marketing, legal, collection, and enforcement infrastructure
  - Long term multi-year commitment of more than ten years
  - Patents must withstand test of time and repeated challenge
- **Litigation**
  - File infringement litigation then license; common patent troll strategy
  - Substantial up front costs even with contingency litigation compensation
  - 3-5 years to complete program
- **Sale of Patent**
  - One time deal with troll, licensing agent, or strategic tech player
  - Limited returns but low risk and faster turn around
- **Joint Licensing**
  - Partnering with industry leader to support licensing and share royalties

# Paths for Manufacturers and Sellers

- **Cross Licensing**
  - Common practice in electronics industry to avoid costly litigation
  - Difficult to establish fair and reasonable royalties for small players
- **Licensing of Standards**
  - Pooling of IP relating to industry standards (for example MPEG-LA)
  - Organizers of standards and pools usually get dominant share
- **Litigation**
  - Expensive and long path taken by industry leaders against each other
- **Investment in Patent Aggregation Pools**
  - New form of IP investment/insurance popularized by IVP
- **Joint Licensing**
  - Partnering with NPEs to support licensing programs and share royalties

# Determinants of IP Value

- **Market success and infringement**
- **Breadth, depth, and number of filings and claims**
- **Priority date and validity of patents**
- **Strict adherence to all legal and procedural policies**
- **Clear ownership and financial position of owner**

# Determinants of IP Value

- **Size of potential markets for applications**
- **Value chain level of first infringement and exhaustion**
- **Current and forecasted level of infringement**
- **Number of patents citing invention**
- **Potential impact of technological innovation**
- **Profit and cost structure of industry of application**

# Sales Value of Patents

- Result from Ocean Tomo open auction

<b>Auction</b>	<b>Total Proceeds</b>	<b>Lots Sold</b>	<b>Lot Average</b>	<b>Max Lot</b>	<b>Lots &gt; \$1M</b>
Spring 2009	\$2,900,000	6	\$483,333	na	na
Fall 2008	\$12,842,500	48	\$267,552	\$1,815,000	1
Spring 2008	\$19,629,500	53	\$370,368	\$6,600,000	4
Fall 2007	\$11,599,500	38	\$305,250	\$1,925,000	2
Spring 2007	\$11,429,000	34	\$336,147	\$3,025,000	2

# M&A Value of Display IP/Tech Start-Ups

Buyer	Bought	Date	Transaction	Amount
PVI	eInk	2009/6	Company	\$450,000,000
Sumitomo	CDT	2007/7	Company	\$285,000,000
Qualcomm	Iridigm	2004/9	Company	\$170,000,000
Dolby	Brightsides	2007/2	Company	\$28,000,000
Rambus	Global Lighting	2009/4	Company	\$26,000,000
API	NanoOpto	2007/7	IP + Equip	\$4,000,000
Nitto Denko	Optiva	2005/7	IP Portfolio	\$5,000,000
Fuji Film	Vitex		IP License	unknown
Real D	ColorLink	2007/3	Company	unknown
Real D	StereoGraphics		Company	unknown
Polatechno	Moxtech	2004/1	Company	Unknown
Samsung	Clairvoyant	2008/	IP	Unknown
Samsung	Liquivista	2011/1	Company	Unknown
Rambus	Global Lighting			

# Realistic Expectations for Success

- **Licensing Program**

- Successful LCD Program: NPV of \$10M to \$50M
- Initial deals in year 2-3
- Stable run rate in year 5-8

- **Sale of Patent**

- Range of \$100,000 to \$2,000,000
- Six to eighteen months

- **Litigation**

- Partnership with IP owner, contingency law firm, and investor
- Range of \$500,000 to \$5,000,000 in 2 to 5 years shared by partners
- Plan is to file and then settle before trial

# Patience and Perseverance

- **Patent Prime of Life: The Second Decade**
  - Outcome of filings and examination are known
  - Prior art is clear
  - Clear assessment of commercial success and value
  - Plenty of time to monetize before end of life
- **Patents and Start Ups**
  - Product sales trump patents in early years
  - Proof of Concept necessary to open the door
  - Joint development programs and licensing necessary to penetrate LCD supply chain

# IP Strategy Issues for the Teens

**Core Players: Confrontation or Cooperation?**

**Aggregators: License, Insurance, or Litigation**

**NPEs: Sell, License, or Assert**

# Core: Confrontation or Cooperation

- **Litigation dominant between Core Players since 2000**
  - Clash of the Giants: Samsung vs. Sharp; LGD vs/ AUO & CMO
  - Outcomes highly risky and take years to finalize
  - Will assertion era come to an end in 2010?
- **Forms of Cooperation in the new decade**
  - Cross licensing
  - Standardization
  - Pooling patents for licensing
  - Purchase of next gen IP for sharing among Big 5
  - Balkanization: Korea, Japan, Taiwan, China

# About Fergason Licensing

- Fergason Licensing offers a full spectrum of services to support technology and innovation companies in commercializing their inventions in worldwide markets through licensing of intellectual property and joint development.
- **Services include:**
  - Opportunity analysis and formulation of IP strategy
  - IP marketing, licensing, licensee servicing enforcement, and audit management
  - Marketing and negotiation of joint development agreements
  - Marketing and sale of IP
- [www.fergasonlicensing.com](http://www.fergasonlicensing.com)
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# FL Licensees for SSBC™ IP

<b>Company</b>	<b>Licensed Since</b>	<b>Products</b>
Panasonic	2001	LCDTV and Projectors
LG Display	2003	All LCD Modules
Seiko Epson	2004	Projection
Sharp	2006	All LCD Modules
Samsung	2006	All LCD Modules
Chinontec	2006	Projectors and Engine
Sanyo	2007	Projectors
JVC	2007	LCDTV and RPTV
Sony	2008	LCDTV, RPTV, Modules
AG Neovo	2008	LCD Monitors
Viewsonic	2008	LCD Monitors
Lite-On	2008	LCD Monitors

# FL Licensees for SSBC™ IP

<b>Company</b>	<b>Licensed Since</b>	<b>Products</b>
Epson Imaging Devices	2008	Mobile LCD Modules
AUO	2008	All LCD Modules
Sharp	2008	Mobile LCD Modules
NEC	2009	LCD Monitors and Projectors
Philips	2009	LCDTV, Monitors and Projectors
Funai	2009	LCDTV
Hitachi Display	2010	Mobile LCD modules
TPV	2010	Televisions and Monitors
Wistron	2010	Televisions and Monitors
Qisda	2010	Monitors
Tatung	2010	LCD Monitors
Eizo Nanao	2010	LCD TVs & Monitors