Company Overview

- **Leading Semiconductor IP Supplier**
  - POWERVR™ graphics, video, display processing
  - ENSIGMA™ receivers and communications processors
  - META™ processors – SoC centric real-time, DSP, Linux
  - Licensees: Leading Semis and OEMs
  - #3 Silicon Design IP provider *

- **Innovative Consumer Product Manufacturer**
  - PURE digital radio, internet connected audio

- **Established technology powerhouse**
  - Founded: 1985
  - Employees: more than 650 worldwide

* Source: Gartner IP Suppliers Report, March 2010

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Group Revenues

£m

* 13 months to April ‘08

© Imagination Technologies Ltd.
The connected “four screens”: TV, PC, Mobile & In-Car

Mobile devices have to deliver the internet, PC capabilities, TV, music, navigation and more…
Our Technology Business

SoC Technologies & Solutions

- ENSIGMA Communications
- META Processor/DSP
- POWERVR Graphics
- POWERVR Display
- META Audio
- POWERVR Video

SoC

Customer’s Internal IP
3rd Party IP
IMGworks Customised IP

Markets

- Mobile Phone Multimedia
- Hand-held Multimedia
- Home Consumer & Entertainment
- Mobile Computing
- In-Car Electronics
- Emerging Markets

Audio

Display

Radio
TV
Mobile TV
WiFi
Bluetooth etc

MeOS
Nucleus
Linux
Android
Audio
SW Stacks etc

OpenGL
OpenGL-ES
OpenVG
DirectX etc

De-interlace
Frame rate conversion
Noise reduction etc

MPEG1/2/4
H264
VC1 etc
The Virtuous Technology Cycle...

Imagination

- Creates & Licenses IP
- Makes products & sells them to consumers...

Emerging trend with OEM partners

Consumers demand more, better, cheaper... everywhere

Consumers

- which drives demand for more advanced & efficient IP...

Create SoCs & Sells Chips

OEMs

- Consumers demand more, better, cheaper... everywhere
Ecosystems are growing & evolving

POWERCVR Insider
graphics ecosystem

- OEM Developers
- Middleware e.g. Flash
- UI Developers
- Games Developers
- Navi Developers
- Tools & SDK developers
- OS Vendors & Communities

POWERCVR video ecosystem

- Imaging apps developers
- Multimedia Player vendors
- Video codec developers

ENSIGMA communications ecosystem

- Modem developers
- Stack developers
- RF tuner developers

META Processor & DSP ecosystem

- Toolchain suppliers
- DSP algorithm developers
- OS suppliers
End Products
Increasing Numbers, Breadth of Markets and Capabilities
Mobile Phones with POWERVR SGX

>50 phones released to market; many more in development
## SoC Design Wins Growing

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Total SoCs per Segment</th>
<th>SoCs Shipping</th>
<th>End-user Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Phone Multimedia</td>
<td>30</td>
<td>13</td>
<td>~190+</td>
</tr>
<tr>
<td>Handheld Multimedia</td>
<td>9</td>
<td>5</td>
<td>~20+</td>
</tr>
<tr>
<td>Home Consumer &amp; Entertainment</td>
<td>21</td>
<td>8</td>
<td>~250+</td>
</tr>
<tr>
<td>Mobile Computing</td>
<td>10</td>
<td>5</td>
<td>~75+</td>
</tr>
<tr>
<td>In-car Information &amp; Entertainment</td>
<td>11</td>
<td>4</td>
<td>~15+</td>
</tr>
<tr>
<td>Emerging Markets/Others</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>85</strong></td>
<td><strong>35</strong></td>
<td></td>
</tr>
</tbody>
</table>
Our Business Targets

Million Units

<table>
<thead>
<tr>
<th>FY'04</th>
<th>FY'05</th>
<th>FY'06</th>
<th>FY'07</th>
<th>FY'08</th>
<th>-</th>
<th>FY'10</th>
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</tbody>
</table>

Long Term Target

Mid-Term Target FY2010/11
The Business of IP
Why Do Licensees Choose Imagination?

What Our IP Offers

- **Industry Leading Performance**
- **Proven/Mature**
  IP with successful shipping history
- **Designed for Mobile**
  Performance at lowest power
- **Complete Roadmaps**
  Scalable architectures
- **Solution Focus**
  SoC ready + ecosystems

What It Means to Partners

- **Best in Class**
  It does the job better than anything else
- **Low Risk**
  It will always work correctly in volume production
- **Lowest Power**
  Longest battery life (mobile) eco friendly, no fans (fixed)
- **Maximised ROI**
  From low to high end, over multiple products & markets
- **Time To Market**
  Shortest SoC design time; unrivalled ecosystems
The Benefits of Using 3rd Party IP

- **Lower Total Cost of Ownership (TCO)**
  - “Standard” technology is rarely developed by a single company
  - Developing & maintaining standards-based IP in-house is no longer cost-effective

- **Lower Risk**
  - Proven IP dramatically reduces silicon failure
  - Proven application software means fewer problems in the field
  - 100% standards conformance assured

- **Shorter Time To Market & Time To Volume**
  - Slash development time
  - Lower risk means faster volume ramps

- **Better utilisation of Internal R&D**
  - Re-assign for solutions & services or customer-specific IP
  - Major trend for all semiconductor & technology providers

- **Staying Up To Date With Latest Standards**
  - Partnership with IP provider enables customers to maximise influence on future standards without the cost
Make or Buy:

Cycle times are shrinking
Volumes are getting higher - the stakes are getting higher too

- Pre-verified platforms essential
- Use internal resources for adding proven value and delivering solutions
IP Technologies Overview
Imagination’s IP – Comprehensive Solutions

Radio Processor (RPU)
Communications

Central & Embedded Processors (CPU, EPU)
Real Time; DSP; Apps Platforms, e.g. Linux

Graphics Processors (GPU)
Graphics & Video

Display Processors
Image enhancement

Customer IP
Value-add IP & Technologies

3rd Party IP
Memory, Peripherals, Analog, I/O

IMGworks
Customised IP

ENSIGMA
Communications

META Processor/DSP

POWERVR Graphics

META Audio

POWERVR Video

POWERVR Display Enhancement

SoC

Audio

Display/Video
**POWERVR™ graphics**

- Industry’s leading mobile and embedded graphics acceleration solution
- Highly efficient architecture - best performance and power per unit area
  - Tiled-based & deferred pixel shading architecture => optimal bandwidth
- Universal Scalable Shader Engine (USSE™)
- Scalable architecture; low power; high performance
- OpenGL 2/3*, OpenGL|ES 2.0/1.1, OpenVG 1.1, DirectX 9/10+*
POWERVR™ video

- Multi-standard HD/SD video decode and encode
- Industry-leading low power consumption
- Small silicon area
- H.264 High/Main/Baseline, H.263, MPEG4, MPEG2, VC-1
- Unique architecture combining programmable stream processor with multi-mode hardware engines
POWERVR™ display

- Advanced family of display enhancement products for HDTV and STB
  - I2P, PDP, IEP, CADI, TVE,…
- Industry-leading performance verified by leading manufacturers
- POWERVR I2P261
  - uses innovative hybrid motion + gradient compensation
  - 90% of full Motion Compensation using 25% silicon area
ENSIGMA™ communications

- IP platform solution based on Programmable Universal Communications Core (UCC™) and META™
- Programmable demodulation complex vector processor (MCP)
- Configurable signal input (SCP) & error correction (ECP) engine
- Global TV terrestrial standards: DVB-T Nordig, ISDB-T 13seg, ATSC, DVB-T2, and many more
- Connectivity: Wi-Fi and more to come
- Radio standards: DAB/DAB+, FM/RDS, ISDB-Tmm, etc
- Mobile TV standards: DVB-H, T-DMB, ISDB-T 1-seg, etc
## The Connected World: Increasingly Fragmented

<table>
<thead>
<tr>
<th>Analogue</th>
<th>Digital 1st Gen</th>
<th>Digital 2nd Gen (HD)</th>
<th>Digital 3rd Gen (Converged Global)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAL</td>
<td>DVB-T or DVB-S or DVB-C</td>
<td>DVB-T</td>
<td>DVB-T2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DVB-S</td>
<td>DVB-S2</td>
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<tr>
<td></td>
<td></td>
<td>Wi-Fi</td>
<td></td>
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<tr>
<td>FM/AM</td>
<td>DAB</td>
<td>FM</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>DAB</td>
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<tr>
<td></td>
<td></td>
<td>DAB+</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wi-Fi</td>
<td></td>
</tr>
<tr>
<td>Ethernet</td>
<td>Ethernet</td>
<td>Ethernet 10/100</td>
<td>Ethernet 10/100/1G/10G</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wi-Fi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>All TV</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>All Radio</td>
<td></td>
</tr>
<tr>
<td>TACS</td>
<td>GSM</td>
<td>GSM</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>3G</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>LTE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wi-Fi (VoIP)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Bluetooth</td>
<td></td>
</tr>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

- Plus: FM
- Plus: DAB/DAB+/DMB-R
- Plus: HDRadio
- Plus: XM/Sirius
- Plus: ISDB-Tmm
- Plus: Ethernet
- Plus: 10/100/1G/10G
- Plus: Wi-Fi
- Plus: WiMax
- Plus: Powerline
- Plus: NFC
- Plus: UWB
- Plus: -2G/GSM
- Plus: -3G/LTE/4G
- Plus: -CDMA
- Plus: -TD-SCDMA
- Plus: -PHS
- Plus: -Bluetooth
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<td>DVB-Tn, DVB-Sn, DVB-Cn, DVB-Hn, ATSC M/H, Flo, ISDB-T 1/3/13, GB20600, Wireless HDMI</td>
</tr>
<tr>
<td><strong>FM/AM</strong></td>
<td>DAB</td>
<td>FM, DAB, DAB+, Wi-Fi</td>
<td>ENSIGMA UCCP, Multi-Std Programmable Radio Processor Unit (RPU)</td>
</tr>
<tr>
<td>-</td>
<td>Ethernet</td>
<td>Ethernet 10/100, Wi-Fi, All TV, All Radio</td>
<td></td>
</tr>
<tr>
<td><strong>TACS</strong></td>
<td>GSM</td>
<td>GSM, 3G, LTE, Wi-Fi (VoIP), Bluetooth</td>
<td>-Plus: -2G/GSM, -3G/LTE/4G, -CDMA, -TD-SCDMA, -PHS, -Bluetooth</td>
</tr>
</tbody>
</table>

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META™ processors

- Multi-threaded 32-bit embedded processor/DSP for SoCs
- Scalable family from simple controller to central processor
- DSP extensions for excellent audio and signal processing
- Single cycle context switch between threads
- Linux 2.6, MeOS™, Nucleus and native execution per thread
- Full CODESCAPE™ toolchain
- Extensive audio codec and internet communications support
META Connected Processors
The future of embedded CPUs and MCUs

- Connectivity is not an option!
- CE products will all need to be connected
- Broadcast plus internet and other forms of connectivity is the way forward

META Connected Processor IP Platform

Internet
- Enabling technologies
- Partners
- Services & content
Connecting Chips to Clouds

Examples

- Healthcare Portal
- Energy Portal
- Security Portal
- Others

Home Device/Hub

Comms

Broadcast

Internet

WiFi

Local

Domestic Power Management

Assisted Living & Health

Home Multimedia

Others

Security & Surveillance
Key Markets & Driving Forces

Mobile Phone & Handheld Multimedia
- App stores: changing the landscape
- UI key for product ID (after plastics)
- Web 2.0 video & graphics essential
- Connectivity, location awareness new drivers

Home Consumer & Entertainment
- Convergence of broadcast & internet – the next major wave
- UI becoming key to product differentiation
- Bringing the three screens together (mobile, PC, TV) is key

Mobile Computing
- Tablets – large display smartphones, not small laptops
- Unconstrained internet – no compromise to laptop
- Graphics and video acceleration essential

Navigation & Electronic Dashboards
- Graphical richness and innovation key – UI, dashboard, navi
- Cars overdue for better integration in a multimedia-driven world
- Electronic displays save costs and improve user experience

Emerging Markets
- Healthcare in the home – aging populations drives the need
- Green energy – good for everyone ecologically
- Home connectivity & automation – numerous innovations

Our IP cores are designed to ride and drive these trends
Industry Trends

- **Semiconductors**
  - Ongoing consolidation
  - Moving beyond fabless – solutions are key
  - Process advances still following Moore’s law

- **OEMs**
  - Unstoppable trend to application platforms
  - High Level Operating Systems (HLOS) everywhere
  - Connectivity and internet in everything

- **Middleware & Content**
  - App stores have created real content market in mobile
    - This will propagate to other segments
  - Open standards APIs (e.g. Khronos multimedia) proliferating
  - Adobe’s Flash integral to the future of mobile internet

- **Consumers**
  - Expect everything everywhere
  - User-generated content & interactivity
  - Sufficiently technology-savvy to influence new innovations
    - more fun, easier to use, more productive, save time…
## Imagination Market Update – 2012
As at December 2009

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>TAM* 2012 M Units</th>
<th>IMG SAM** 2012 M Units</th>
<th>Potential IMG Share of SAM</th>
<th>Key Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Phone Multimedia</td>
<td>1200</td>
<td>750</td>
<td>30%-50%</td>
<td>Market dividing into Application phones &amp; Basic phones; growing interest in full IP portfolio</td>
</tr>
<tr>
<td>Handheld Multimedia PMP (players), DSC (cameras), Mobile TV</td>
<td>290</td>
<td>250</td>
<td>30%-50%</td>
<td>Growing market for graphics &amp; video as well as multi-std. connectivity + broadcast</td>
</tr>
<tr>
<td>Home Consumer Digital TV/STB, Radio/Audio, DPF (photo frames)</td>
<td>440</td>
<td>250</td>
<td>10%-25%</td>
<td>DTV/STB/IPTV accelerating use of broadening range of IMG’s IP; Internet audio &amp; DAB growing</td>
</tr>
<tr>
<td>Mobile Computing MID, Ultra-Mobile PCs, Netbook PCs, Laptop PCs</td>
<td>300</td>
<td>200</td>
<td>20%-40%</td>
<td>Our key relationships ensure growth in Intel and ARM “camps”; DirectX expertise key</td>
</tr>
<tr>
<td>In-car Electronics Navigation, PND, Dashboard</td>
<td>100</td>
<td>40</td>
<td>15%-30%</td>
<td>Strong semi &amp; OEM partners + recent Navteq relationship show relevance of our IP in automotive</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2330</strong></td>
<td><strong>1490</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* TAM = Total Available Market in the segment (e.g. total number of handsets per year)

** SAM = Serviceable (by IMG) Available Market in the segment (e.g. the proportion of handsets open to graphics use)
Handsets Deployed By Operators World-wide

>250m phones utilising Imagination’s IP solutions

Over 150 handset models sold worldwide containing Imagination’s IP solutions

Note: In some regions, handset sales are managed by retail channels rather than operators.

All phones shown based on POWERVR SGX unless otherwise stated.
All of the key markets are showing increasingly rapid adoption of ever more powerful GPU-based graphics acceleration.
PURE Consumer Electronics Overview
• The world’s leading digital radio brand
  • Technology innovator and trend setter
  • Product style and quality

• Showcases Imagination IP and drives the market
  • Digital radio
  • Connected radio/audio and multimedia

**DAB Contemporary**
- ONE Mini (DAB+)
- ONE Classic (DAB+)
- ONE Elite (DAB+)
- Elan II (DAB+)

**DAB Traditional**
- EVOKE-1S (DAB+)
- EVOKE-2S (DAB+)
- EVOKE-3
- EVOKE Mio

**DAB – Bedside**
- Siesta (DAB+)
- Siesta iDock (DAB+)
- Chronos II (DAB+)
- Chronos CD II (DAB+)
- Chronos iDock II (DAB+)
- TEMPUS-1S

**DAB Handheld**
- PocketDAB 1500
- Move

**In-Car DAB**
- Highway (DAB+)
- Sensia (DAB+)

**Accessories**
- i-10

**Connected Radio**
- Siesta Flow (DAB+)
- EVOKE Flow (DAB+)
- AVANTI Flow (DAB+)

www.thelounge.com
Digital radio
- Profile 1 products (DAB, DAB+, DMB-R) shipping
- PURE launched in Australia, France, USA
- Widest range of international products

The Lounge & “Flow” platform
- “Flow” product range doubled
- Launch of Apps on Lounge and Sensia platform
- Connected audio platform licensed to O²

Coming in 2010…
- Further market expansion
- Enhancement of Sensia product family
- Significant additions to the “Flow” product range
- Launches of new connected services
- Major updates to The Lounge
- Launch of music download services
Wi-Fi and Internet Connectivity
All of your content wherever you want it

DAB/Internet in the bedroom

DAB/Internet in the kitchen

DAB/traffic info in-car

Wi-Fi Internet Router

PURE Media Server

PURE’s online content portal

DAB/Internet Micro Hi-Fi in the living room
Technology Market Data
As at June 2009
Increasing number of app stores driving rich graphics content

45nm & below enables advanced OS’s in lower cost handsets
e.g. Android, Symbian, WinCE

Popularity of Web 2.0 social networking going mobile driven
my low power video

UIs and personal navigation driving graphics
… this fuels mobile gaming

POWERVR MBX & SGX are the de facto standards for mobiles

Graphics & video becoming “must haves” for all smartphones

Definition: Smartphone - any phone with a high level OS or ability to update applications after initial deployment
Mobile Phone Multimedia (MPM) – any phone where rich graphics, video and/or audio media is a key feature

Note: not all IP technologies described are used in products shown; products are for illustration only
Dedicated handheld multimedia devices will continue to grow

- Not everyone wants everything converged on one device
  - users expect smartphone-class functionality on media-only devices

- People will often not change their phones for new media features
  - so growth in complementary sub-$200 multimedia products

- Handheld multimedia products are attractive “impulse buys”
  - much better for gifts than phones

- Audio codecs & post-processing (e.g. Dolby 5.1) need more MIPS

- Connectivity everywhere changes media consumption patterns
  - don’t need to store everything

Definition: Handheld Multimedia (HMM) – Personal Media Players (PMPs), non-phone based Mobile TVs, multimedia-enabled Personal Navigation Devices (PNDs)

Note: not all IP technologies described are used in products shown; products are for illustration only.
Home Consumer Electronics

**Connectivity and HD driving new technology take-up**

- HDTV is at the front of a new wave of consumer electronics
  - all broadcast moving to HD
  - HD unstoppable for new content
- Consumers expect content from multiple sources
  - broadcast, broadband, phone, PMP
  - podcasting and internet access
- Connected audio set to inject new life into radio and audio markets
- STB essential for new services
  - multi-format video and audio content
- TV is the #1 home “display resource”
  - …but for much more than just TV viewing

**Definition:** HCE – Digital TVs and Set-Top Boxes (DTV & STB); Digital Radios; Connected Audio devices

![Graph showing growth in M Units from 2008 to 2013 for various technologies including Digital Radio (satellite), Connected AV, Digital Radio (terrestrial), STB, and DTV.]

- POWERVR SGX
  - 3D UI, gaming
- POWERVR VGX
  - Low end UI
- POWERVR VXD
  - Video playback
  - Streaming video
- META AXD
  - Connected Audio
  - Dolby 7.1, 5.1
- ENSIGMA UCCP3
  - WiFi, Bluetooth
  - Broadcast TV
  - Digital Radio

Note: not all IP technologies described are used in products shown; products are for illustration only.
Mobile Computing

- Mobile Internet driving next generation products
  - must be full desktop experience
  - Flash, accelerated browsers key
- Intel vs ARM
  - we’re strong in both camps!
  - PC ODMs seeing boom in netbooks – their next big market
- MID + VoIP: how much will this impact phone sales?
- Android, Chrome OS and Linux all becoming stronger
  - consumers starting to look for a credible alternative to Windows

Netbooks & Mobile Internet are hot consumer-driven markets

POWERVR SGX
- Gaming, Flash
POWERVR VXD/VXE
- Video playback
- Streaming video
- Web 2.0 interaction
META AXD
- Connected Audio
ENSIGMA UCCP3
- WiFi, Bluetooth
- Broadcast TV
- Connected Audio

Note: not all IP technologies described are used in products shown; products are for illustration only
In-Car Electronics

Electronic dashboards & connected ICE will be key from 2012

- In-car systems rapidly evolving
  - integrating UI, navi, dash
  - multimedia functions becoming essential, e.g. multi-stream video

- PND OEMs developing 3D graphics based products
  - map rendering
  - UI and POI (Points of Interest)

- Smartphone applications now driving in-car look and feel

- In-car communications set to expand
  - streaming TV, video, audio
  - connectivity – WiFi, Bluetooth etc
  - increasingly sophisticated car networking

Note: not all IP technologies described are used in products shown; products are for illustration only