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GDC 2011

PC Gaming's Global Value Propositions

Theme: Targeting the largest market opportunities

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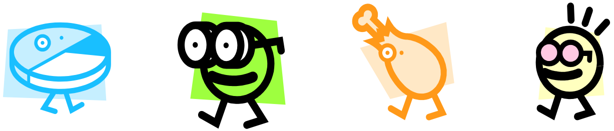
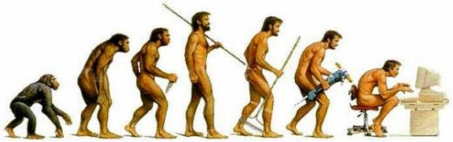
President - PC Gaming Alliance (PCGA)
Strategic Graphics Planner - Intel

Agenda

- Introductions
- High level overview of choices
  - Key Business Decisions
  - Format decisions
  - Maximize chances of success
- Scale and Scope of the Game Ecosystems
- Market conditions and trends
  - *Traditional* video games evolving
  - Touch a little bit on future trends





To make, or not to make a PC Game – that is the question

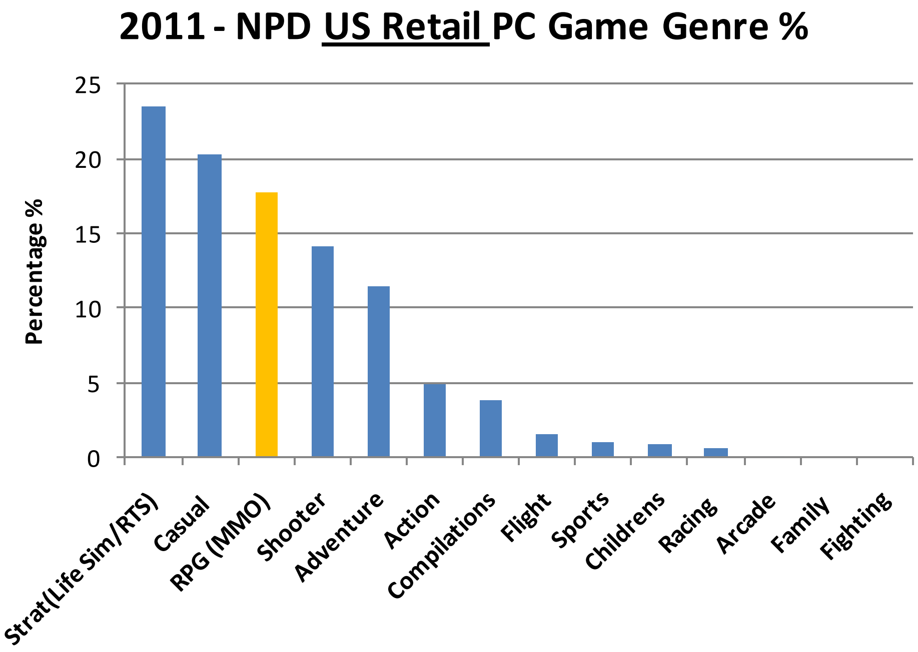
A Game Developer's Journey

- Game Vision – follow your *passion*
- *Some* key questions:
  - ❑ What game, genre?
  - ❑ Appeal (Gender, Age, multicultural)
  - ❑ Budget (e.g. Buffer? Funding? ROI?)
  - ❑ Target Platform/Format
  - ❑ Location
  - ❑ Market (e.g. Competition, Trends)
  - ❑ Publishing, Revenue Model, and Marketing

Almost overwhelming array of decisions to factor in

Follow your Vision into any Genre

- Once Vision is established
  - ❑ Compromise your vision least on PC!
  - ❑ Scale content tops down
  - ❑ Think beyond Gamepads
  - ❑ Where can the game be played?
- *<u>Illustration:</u>* NPD's ~14 Super Genres
  - ❑ Opportunities across spectrum
  - ❑ Aim for top ten position by genre
  - ❑ Consider: MMO subscriptions, F2P
- Game appeal
  - ❑ Broaden – mindful of ESRB

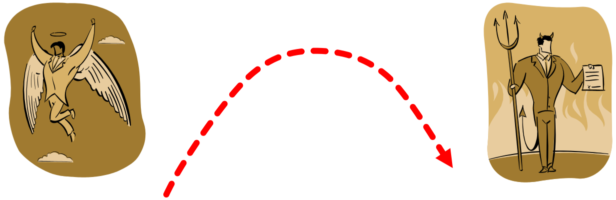


Source: NPD 2011 Jan US Retail SW unit sales

*PCs can play *any* game genre to its fullest potential*

Is there money in PC Games for Developers?

- Job 1 - Protect your IP-Franchise/Brand
- Research! Learn from others! (Post Mortems, Lawsuits)
- Consult Legal Counsel – early!
- Funding (PLEASE – read the fine print!)
  - Angel investors, Loans, VCs, Publishers, Self Publish
- Budgets and Start Up Costs
  - Start lean & mean – Small is *very* beautiful
  - Budget wisely ($100k to $100m???)
  - Know break even (Incl: TAM, Attach, Royalties, P&L)
- Publishing (Retail/Digital/Both?)
  - Digital ~70/30
- ~80% of sales typically occur within 1st 30-90 days



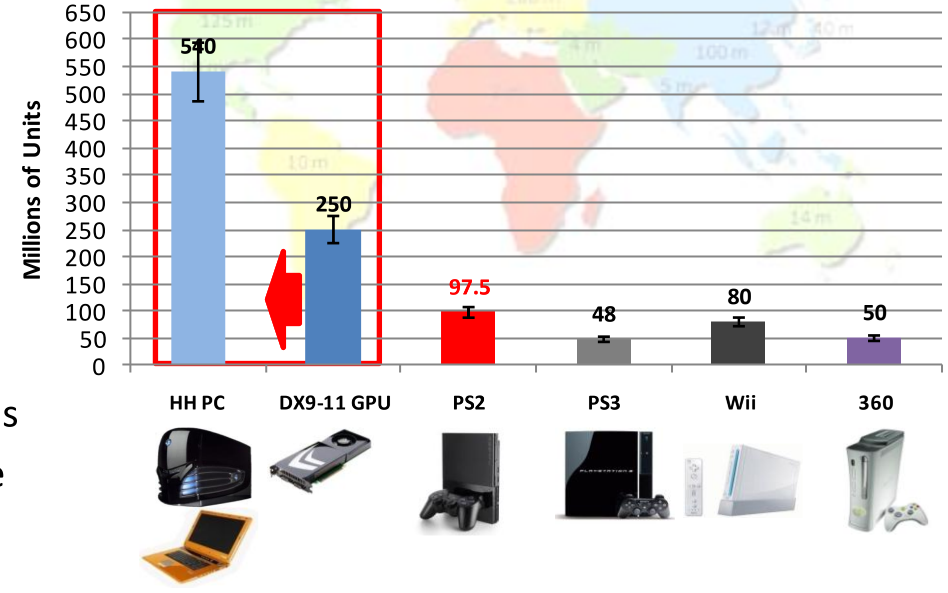
Infinite # of Sales Curves

PC Gaming can be very extremely lucrative when well executed

Traditional Gaming Competitive Landscape – TAM/IB

- 3 Major Design Points (PC/Mobile/Console)
- Catch and Ride major waves
  - ❑ Laptop growth is King (High GPU attach)
  - ❑ Smart/iPhones/iPads/Slates/Netbooks?
  - ❑ Apple
- Discussion Points:
  - ❑ Cloud and Games as a Service
  - ❑ Keep your gamers engaged & connected
  - ❑ Consoles Oxymoron: Distinct Ecosystems
  - ❑ Share of mind/wallet/disposable income
  - ❑ Attach/Tie Ratio (5%?)

2009 - PCGA Horizons Fst for 2010
WW Active Install base by Platform

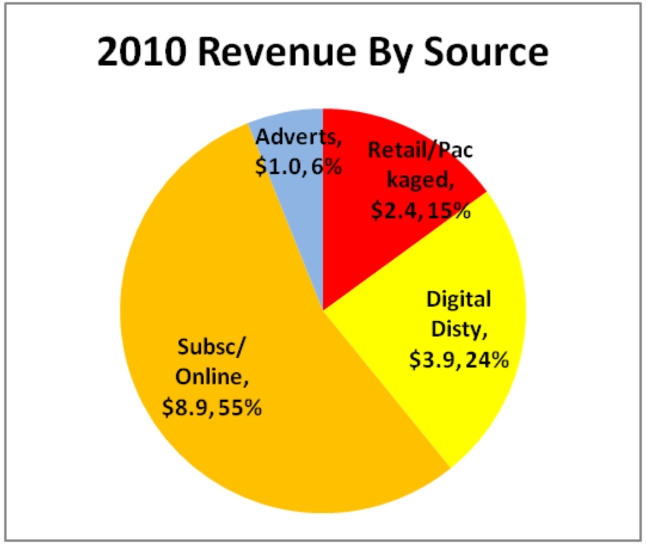


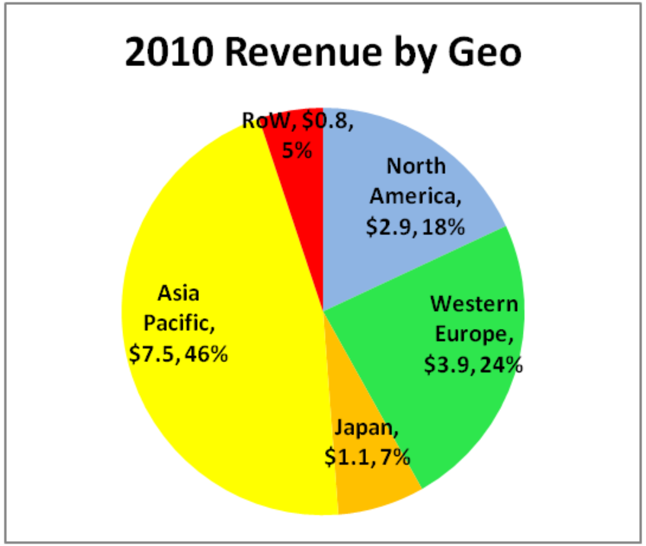
Source: IDC, PCGA 2009 Horizon's report, & Intel

PC Gaming provides by far the largest Gaming TAM/IB opportunity in the world!

2010 PC Gaming Revenues hit $16.2b!

- 2010 PCGA Horizon's Report preliminary snapshot. (Final report trending slightly higher)
- Primary growth from Online, Subscriptions, Free to Play, Micro transactions.
- Retail continuing to shrink but more than offset by Digital Distribution and F2P/Online



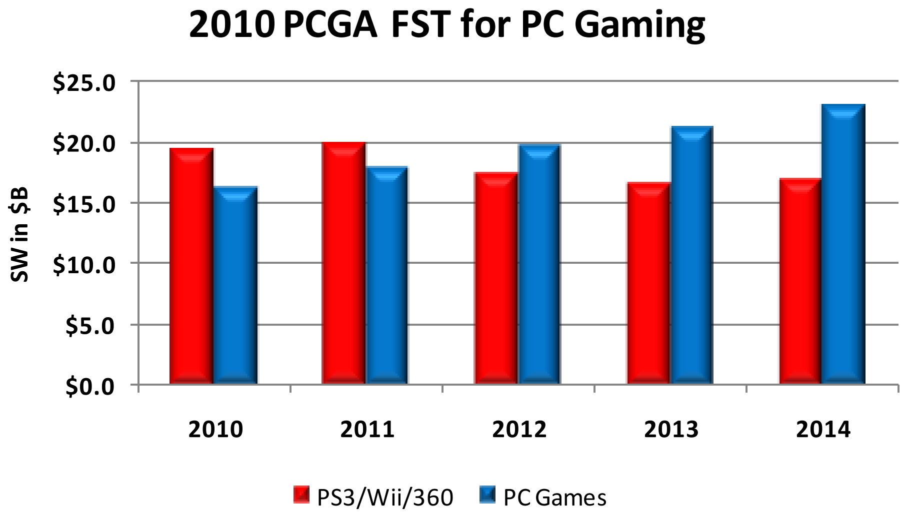


Source: PCGA 2010 Horizon's Software Report (DFC)

Digital and Online in conjunction with other Geos emerging present incredible opportunities

PC Games Forecasts

- PC Gaming Software business bigger than any other singular Platform
- PC Gaming Software on track to surpass *all* the Consoles combined next year
  - Note: This unfair view stacks all Consoles together. (PS3 + Wii + 360) they all compete against each other.



Investors taking careful notice of the above trend lines

Dispelling some myths in the market

- #1 – Piracy is killing the PC?
  - ❑ Reality: *PC Piracy dropping*: Due to Game Design & Delivery evolutions
  - ❑ Reality: PCs not suffering as much from Secondary Sales issue
- #2 - Ease of Use is worse on the PC?
  - ❑ Reality: Game Design, Install, OS, & Hardware drivers better than ever!
- #3 - PC isn't leading innovation?
  - ❑ Reality: The vast majority of Games/Tech is developed on PCs (e.g. Kinect)
  - ❑ Reality: PC's are a very dynamic and evolutionary creature
- #4 - PCs are more expensive?
  - ❑ Reality: That depends & is somewhat relative. PCs are an amazing value
- #5 - PC games don't sell as well as Console Games?
  - ❑ Reality: Several ways of interpreting – PC Games continue to sell very well

Source: 2009 PCGA SW Horizon's Report (DFC); and PCGA Anti Piracy Whitepaper

PC Gaming has emerged from a 'survival of the fittest' test and trial

Summary

- Key Value Propositions
  - PCs can play any Game Genre to maximum potential
  - Least amount of compromise to the Game Design/Vision (Mileage scales by Config)
  - PC gaming can be every bit as, or even more, lucrative than other platforms
  - PC Gaming Hardware TAM provides by far the largest opportunity
  - Digital, Online subscriptions, F2P, Micro transactions are key growth areas for PC Gaming
  - PC Gaming showing growth in all regions; namely Asia Pacific Geo
  - PC Gaming on track to surpass all Console Software revenues by next year in 2012
  - PC Gaming has been tempered & emerged from several trials with some very strong and innovative business models. PC as an open platform is allowing for shifts
- **THANK YOU!**
  - **Please fill out evaluations**

Credits

- Special Thanks to the PCGA
- Special Thanks to DFC, IDC, & NPD
- Special Thanks to my Intel Reviewers
- NOTE: This is a ~20 minute snapshot of just a few key of the high level data points from the PCGA's Horizon's Reports. In-depth analysis is available to PCGA members

Key Takeaways

- Attendees will see up to date PC and Console Gaming TAMS/IB sizing.
- Attendees will also get a Geographic snapshot overview of PC Gaming Worldwide
- Attendees will also get a high level overview of current & upcoming trends
- Attendees will learn about some of the more effective methodologies in PC Game Design and Development that should assist in minimizing exposure to Piracy and expanding into other geographies.
- Attendees will gain some insights as to what's next on the horizon

Speaker Notes/References

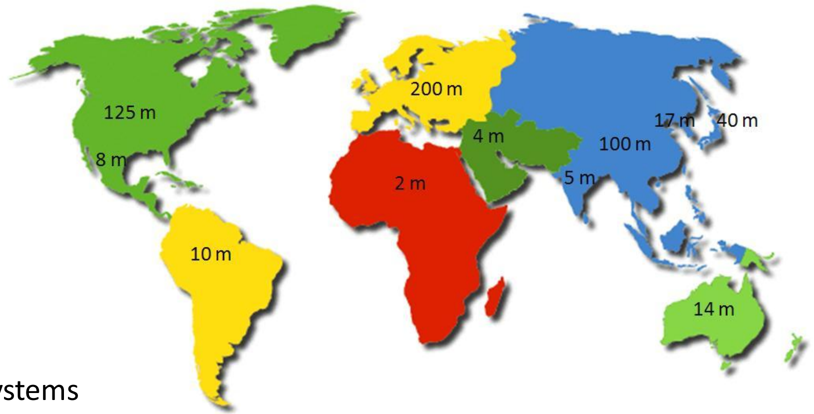
- Slide 5
  - Permission Granted via NPD (Randy Smith) – He recommended using the NPD super Genres. <Matt> has them broken out more granularly.
- Slide 7
  - TAM/IB: Used the Horizon's 2009 FST as one source; reconciled with Intel FST Models (Matt's TAM/IB and Mandy/Finance's FST projections)
  - Note: Randy Stude released a similar presentation & FST in 2009 (Source: 2008 Horizon's HW Data) for the 'State of the Union' presentation.
- Slide 6
  - **HOMEWORK/RESEARCH REFERENCE**: <Matt> I highly recommend the next 2 articles for anyone getting into the 'Gaming' Business.
  - http://www.gamasutra.com/view/feature/1740/call_of_duty_finest_hour__the_.php
  - Mark Deloura article-blog up on Gamasutra: http://www.gamasutra.com/blogs/author/MarkDeLoura/124/
- Slide 8 – 9
  - Permission from IDC David Cole has been granted. Please note: Not the final #'s. Finals will likely be a little higher. (e.g. Nexon not fully reported. Japan trending higher). Data as up to date as possible for GDC timeframe.
- Slide 10
  - **[REQUIRED READING]**
  - Another view of game piracy – by David Rosen.
  - http://blog.wolfire.com/2010/05/Another-view-of-game-piracy

END

Additional Slides and Reference Material after this

TAM/Install Base Considerations

- Largest Platform Opportunity of scale
  - ❑ Start with PC then fan out – not vice versa unless mobile
  - ❑ PC MOST UBIQUITOUS Gaming Platform in the world
- TAM/IB (Total Available Market/Install Base)
  - ❑ PC Global TAM is ~**525+**m key HH As seen on map to right →
  - ❑ ~**212**m of which are discrete GPU based
  - ❑ 7th Gen Consoles combined = ~**170**+m
- Key presumptions/misconceptions
  - ❑ The term "Consoles" is an oxymoron – they are distinct ecosystems
  - ❑ PC Gaming TAM is larger than all the Consoles Mfgs *combined*!
- Choose wisely
  - ❑ PC Gaming is a before, during, & after platform but why?
  - ❑ Innovation and Cost. Consoles – which are more niche & proprietary are more likely to be considered a luxury item in emerging/maturing Geos



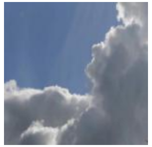
Source: PC HW TAM = 2009 IDC Horizons. Global Map inspiration from Jane McGonigal & Jon Peddie. Console TAM: Wikipedia

Nothing even comes close to the Global PC TAM & Active Install base.

Game Design Considerations


- Games are Globalizing
  - ❑ Massive shift towards mobile form factors – we live in an increasingly mobile world!
  - ❑ ~½ or more of the Market Opportunity is in the Eastern Hemisphere and growing!
- Minimize the impact of Piracy and Secondary Sales

  - ❑ Can't really pirate Free to Play & more complex to pirate an MMO
  - ❑ Piracy shifting towards identity theft
  - ❑ Retail Conundrum (Collectors editions, Game Resale's, etc)
- Digital Distribution (Levels playing field)



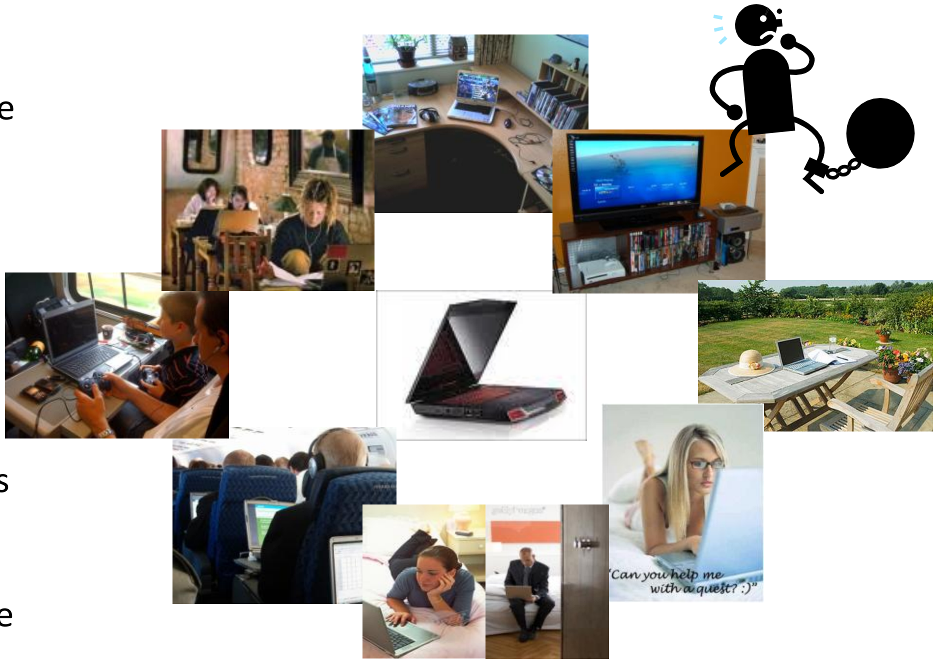
  - ❑ Entertainment Shifting: (iTunes → Music) (Netflix → Movies) (Digital → Games)
  - ❑ More hardened against Piracy
  - ❑ Better Margin, quicker time to market, better patching, less COGs, etc
  - ❑ Reward customers who purchase content legitimately (e.g. Discounts, Promotions, etc)
- Key Suggestions:


  - ❑ Scale cross platform (e.g. Game Engines, Mini-Games, etc)
  - ❑ Take advantage of Online (e.g. MMO) & or Free to Play + Micro-transactions + Advertising
  - ❑ Keep your gamers engaged & connected!

PC Gaming growing rapidly in emerging/maturing GEOs where disposable incomes are low

PC Gaming Laptop’s multiple scenarios

- Only (1) platform delivers all scenarios
- Move beyond the living room!
  - Laptops enjoy a major Form Factor Advantage
  - Content Delivery Advantages on the PC
- Get the most from your Laptop PC
  - Suggest:
  - Target Laptops as a baseline
  - Innovate on Desktops
  - Slate/iPad (Touch) – overlapping with Laptops
- <Prediction>
  - Consoles could become more *mobile* in future iterations. Making them even more “PC-like”



I’m very bullish on Laptop Gaming – IMHO the flexibility & Gaming Value Prop can’t be beat

Publishing - Getting to market

- Think Globally if possible - factor for localization costs
- Creating marketing awareness & hype
  - ❑ Marketing & PR Costs can be ~30% or > of your total costs
  - ❑ Little to no Marketing Budget? (Suggest: Betas, Guerilla, Viral, FB, etc)
- Retail?
  - ❑ Boxed retail is good but a tough place to be. Lets think outside of the box (Sorry for the pun). Note what is taking place with Collectors Editions, Coupons

- Digital Distribution
  - ❑ ~70/30 & getting more favorable all the time. Not all Digital Disty Solutions created equal
- Cloud? Streaming?
  - ❑ Can we characterize games like Farmville, Mafia Wars, etc, as cloud games?
  - ❑ GaiKai, On Live, etc… as other potential options for PC game delivery
  - ❑ BitTorrent – <Anecdote: I've now heard of ~2+ ISVs releasing their F2P games here>

- Avoid exclusives unless *very* lucrative.
  - ❑ Why? Attach/Tie-Ratios have to be very high if the Platform Active IB isn't above 50mu

You typically have what they want/need to help subsidize their platforms – release on PC 1st!!!

How do PC Game sales stack up?

- Note: Results for PC are artificially skewed low. Consoles skewed high.
  - ❑ Lack of insight into PC Game Sales most notably in PRC Geo
  - ❑ PC very strong in Digital Distribution Sales, F2P games, & micro transactions (Not tracked well)
  - ❑ Cannibalization - PC Franchises/IP drains to Console. *Exclusives & ports inhibit PC sales*

	PC	PS2	PS3	Xbox	360	G.Cube	Wii
50mu or >	~1*	0	0		0		1**
20mu or >	0	0	0		0		**2**
15mu or >	1	1	0	0	0	0	**2**
10mu or >	**3**	2	0	0	0	0	0
5mu or >	**5**	**5**	1	1	4***	3	**5**
3mu or >	20	**22**	6	2	6	2	4
2mu or >	7	**37**	6	1	6	4	7
= 1mu or >	65	**93**	8	14	34	17	20

Source: Wikipedia, Cross checked w/ NPD, GFK, Charttrack

Your game content will live longer on a PC. This matrix is a WIP & subject to change

Attach Rate/Tie Ratio Discussion by TAM & Install Base

- Game Platforms Install Base & TAM (Total Available Market) Quick Facts:
  - Est ~525+m Key Consumer PC HH Install Base Worldwide. (Remember - ASPs continue to fall. Capabilities rising!)
  - Est ~130+m Consumer PCs shipped in 2009. (~200-240m estimated to ship in 2014)
  - Est ~100-120+m Discrete GPUs ship every year into all segments. (DT+NB+AIB+Apple+Console+?)
  - Est ~40m combined Consoles sold in 2009 (Wii + 360 + PS3) (Consoles are *not* (1) platform and all compete with one another)
  - Est 50-70% of PC owners have tried, or actively game on their PC across all segments (250-350m PC Gamers WW)
- Estimating Sales against Hardware Install Base: (Attach rates by genre and platform)
  - (Different example: 500m FB users & 57.5m Farmville players = ~12% attach on FB if considered its own "Platform/Ecosystem")
  - 80% of game sales happen in 1st 30-90 days of release. (Exclusives can be double edged)

Genre % Sales mix	PC Platform attach rate %	'n' Platform attach rate %
Shooter (~10%)	250m x .10 = 25m x.05 = 1.25m 200m x .10 = 20m x.30 = 6m	40m x .10 = 4m x .05 = 200k 40m x .10 = 4m x .31 = 1.24m
Family (~19%)	250m x .19 = 47.5m x .05 = 2.375m 250m x .19 = 47.5m x .20 = 9.5m	70m x .19 = 13.3m x .05 = 665k 70m x .19 = 13.3m x .20 = 2.6m
MMO Title (~14%)	250m x .14 = 35m x .10 = 3.5 m x $10/mo x12 = $420m/yr	40m x .14 = 5.6m x .10 = 560k x $10/mo x12 = $67.2m/yr

Attach rates tend to be ~5% for a variety of reason. Need a much higher tie ratio on Consoles

Getting to a million units – know your TAM

- Note: Below hypothetical factors only 'traditional' Gaming Markets
- Attach at ~5% (1 in 20) ← Relative standard. However; on a slider for several reasons. (Better PR/Marketing, Franchise-IP-Brand, recognition, etc can drive higher attach ratios). 5% factors the genre appeal & rating
- The current math assumptions would massively favor the TAM/IB of the PC as a gaming platform
  - PCs:
    - PC All (500+m) w/60% interest in gaming = ~300m PC TAM) @ 5% attach = 15mu
    - PC Discrete GPU only: (~212m) @ 5% attach = 10.6mu
    - Console Exclusives are key driver for PC Games cannibalization. Which is one of many reasons why it's imperative for them to sign 30-90 day exclusives. After that… a PC Game port is typically 'old news'
    - Note: The above also assumes one is able to release game on a global scale
  - Consoles:
    - Wii (~75m IB) = 3.75mu
    - 360 (~40m IB) = 2mu
    - PS3 (~40m IB) = 2mu
- NOTE: In all of the above platforms it's a rare game indeed that's able to hit the 5% attach
- NOTE: High attach/tie ratios don't always necessarily translate to being a good thing for the Console Mfgs. (Side discussion)

Note: This is voodoo math at best – but is an exercise veteran game ISVs model-out

Profitability – Revenue vs. Units

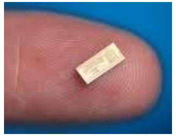
- Typically the next question that arises leads to a discussion towards the most profitable Platform
  - All costs would have been much lower to deliver these games – if there'd been an actual game standard (Precedent Music, Movies) Imagine how much production costs would spike for movies & theaters globally *if* there were 4+ competing standards
  - The more platform standards there are – the more fractured the market becomes; and the more expensive it becomes to develop for, license, etc.
  - For Gaming – The vast majority of games are developed on PC's – then optimized for Consoles; then ported back to the PC. There are several incremental costs accrued as a result of doing it this way
- Total profit per unit / after costs
  - Marketing/PR (ever price a banner ad or a super bowl commercial?)
  - Channel/Retail/Packing/Shipping Costs (e.g. buying shelf space, etc)
  - Full P&L (fully burdened head count costs)
  - Test, QA
  - Legal & possibly licensing fees
  - Take all the above & multiply that now every time you add another platform
  - Example: Certification/Validation costs. (~$7,000 US per submission – may have to go through several passes before Cert/Validation provides a 'pass')

*Note: Will be investigating this as a topic for GDC 2012 – PC Gaming *is* more profitable*

Innovations and Trends

- Where PC is leading innovation
  - Hardware: Smaller, Faster, Thinner/Lighter, Cheaper, Quieter, Wireless, Hi Def, & 3D
  - Software: OS Improvements, Rich Graphics APIs, Web Graphics (HTML 5.0, WebGL, etc), Cloud & Stream Gaming, Digital Distribution, Micro-transactions, F2P, etc
  - Major Platform Trends and Shifts towards:
    - Mobile
    - Convergence (Smart Devices – TVs etc): Devices are becoming more ‘PC-like’
    - Definitions blurring (across form factors, thin/rich client, & proprietary platforms)
  - Perceptual Computing – Gesture, Augmented Reality etc: all coming to PC
- Geo trends of emerging and maturing PC Gaming Markets
  - China standard of living & PC ownership est: at 1/3rd of total population & rapidly growing. Nearing an est., ~500m (1/2 billion) broadband internet users alone!
  - Near Term: Latin America, Eastern Europe, MEA ripe for rapid growth in next decade
  - Longer Term: India poised as being the next China growth opportunity as standard of living increases and infrastructure built out.








Innovations and Trends coming to a PC near you

What's the end state? Where are we going?

Strategic Discussion

- Moving towards a new paradigm for Gaming this decade
- The key concept and idea is to move games towards a 'buy once – plays anywhere' scheme
- Compute Continuum (aka: Cloud Computing, Any Screen, 3 Screens, etc)
  - Organically heading in this direction. Primary driver is the Consumer value proposition
- Why so important?
  - It's all about keeping your customers Engaged, Connected, and Loyal – regardless of the device
  - Platform agnosticism -Simplifies things for the consumer

ISV Examples

- Microsoft Example
  - Cross Platform Gaming – Visual Studio - ~90% shared code
  - Great article & feature by Eric Rudder at Tech Ed (8 Mar, 2010) on V.Studio. Article is here: (http://www.tgdaily.com/games-and-entertainment-features/48746-microsoft-redefines-cross-platform-gaming)
- UbiSoft
  - Assassin's Creed Project Legacy stalking Facebook (http://www.gamespot.com/news/6280122.html)
- Blizzard
  - WoW Armory – (Flash-3D) – ties into parts of the game. (e.g. Bank, Spec'ing, etc)

The PC Form factors will evolve and change over time – so may look & feel in the future

Want to know more?

- Several great resources to get plugged into
  - PC Gaming Alliance http://www.pcgamingalliance.org/
    - Horizon's Reports: DFC & IDC + PCGA Members
  - Visual Adrenaline http://software.intel.com/sites/billboard/
  - Microsoft's MSDN & G4W Software Best Practices
    - http://msdn.microsoft.com/en-us/library/ee417691.aspx
    - http://msdn.microsoft.com/en-us/library/ee417692.aspx
  - Others? Several other companies such as AMD, & Nvidia also have a very rich set of tools, guides, and documentation to help assist you in being successful with your game.
- Two way Communication – what would you like to see addressed in the PC Gaming Ecosystem?
  - Please send suggestions – we can all make a difference
    - Matt.ployhar@intel.com
  - Helps the PC Gaming Alliance members & the industry

Bio

Personal information:

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Biographical information:

Matt Ployhar has been in the Tech industry for fifteen years, fourteen of these dedicated to the Graphics and Gaming Industry. He currently one of the strategic planners in the Intel Software and Solutions Group responsible for providing guidance in the Graphics, and Gaming industries respectively since early 2008.

- Prior to working for Intel Matt worked for Microsoft for nearly 13 years. His first exposure to the Gaming industry was a four year stint in the SideWinder Gaming Devices group as a Technical Evangelist for Force Feedback. In 2000 Matt transitioned to Microsoft Game Studios where he became a Lead Program Manager in their Test and Tools team. Matt was responsible for running several programs, managing the Beta Team, and IHV Account management. Matt was later pulled over to the Windows Division's DirectX team in 2004 to assist with DirectX 10. His final two years at Microsoft were spent on the Windows 7 planning team doing graphics planning and Partner management. Matt also currently chairs the PC Gaming Alliance Research Committee; and was also voted in as President of the PCGA in Oct 2010.
- An avid and extreme PC Gamer, Matt has been a very vocal and outspoken proponent in favor of PC Gaming from day one. In his spare time he tends to play MMORPGs, 1st person Shooters, and RTS style games.
- Matt has various levels of contributions to several 1st & 3rd Party PC games of which a small list can be found here: Moby Games: http://www.mobygames.com/developer/sheet/view/developerId,86864/
- Matt's Intel Software Network blog can also be followed here: http://software.intel.com/en-us/profile/408557/