

The Enthusiast PC Gaming Market

A Report on the Gaming Industry
For PC Platforms

by
Ted Pollak

and

Jon Peddie

Jon Peddie Research
4 Saint Gabrielle Court
Tiburon, CA 94920
415.435.9368



© Copyright Jon Peddie Research 2007. All rights reserved.

Reproduction in whole or in part is prohibited without written permission
from Jon Peddie Research.

This report is the property of Jon Peddie Research (JPR) and is made available to a restricted number of clients only upon these terms and conditions. The contents of this report represent the interpretation and analysis of statistics and information that is either generally available to the public or released by responsible agencies or individuals. The information contained in this report is believed to be reliable but is not guaranteed as to its accuracy or completeness. Jon Peddie Research reserves all rights here in. Reproduction or disclosure in whole or in part to parties other than the Jon Peddie Research client who is the original subscriber to this report is permitted only with the written and express consent of Jon Peddie Research. This report shall be treated at all times as a confidential and proprietary document for internal use only. Jon Peddie Research reserves the right to cancel your subscription or contract in full if its information is copied or distributed to other divisions of the subscribing company without the written approval of Jon Peddie Research.

This report contains a “review” of various products. It is not an endorsement or attempt to sell any products. Under the rules of the “Fair Use Doctrine,” JPR assumes no responsibility for the correct or incorrect usage of any trademarks or service marks.



Authentic copies of this Report feature the Logo above and this Red color bar

Table of Contents

Executive Summary 1

Methodology 1

Primary research for this report 1

Secondary research for this report 1

Definitions 2

Enthusiast segment 2

Performance segment 2

Mainstream segment 3

Value PC segment 3

About Jon Peddie Research 4

Introduction 5

After-Market Enthusiast AIBs 6

Additional Charts and Tables: 7

DIY Systems 9

Peripherals 10

System Configured Enthusiast Gaming PC’s 11

Additional Tables and Graphs: 14

Total Enthusiast PC Gaming Market 14

The Halo Effect 16

Conclusions 17

Appendix 19

Detailed Methodology 19

GPU architectures 22

Gaming PC architectures 25

Next generation architectures 26

Future architectures 28

Pixel Metrics 29

Graphics processors offer a higher ROI 30

How can you measure it? 30

Some examples 30

Case 1 31

Case 2 31

Case 3 32

Where are the Watts being spent? 33

Table of Figures

Figure 1: The Worldwide Enthusiast PC Gaming Hardware Market (Source: Jon Peddie Research) 5

Figure 2: Enthusiast After-Market GPUs for Gaming: Heading for Half a Billion (Source: Jon Peddie Research) 6

Figure 3: World Market for Enthusiast Gaming AIBs by Regions (Source: Jon Peddie Research) 7

Figure 4: The Top Markets for Enthusiast After-Market Gaming AIBs (Source: Jon Peddie Research) 9

Figure 5: The Worldwide PC Gaming Enthusiast Peripheral Market by Region (Million \$US., Source: Jon Peddie Research) 11

Figure 6: Top Enthusiast PC Gaming System Configured Markets (Millions US). In spite of impressive growth in new markets, the U.S. remains the largest market for PC game systems. (Source: Jon Peddie Research) 12

Figure 7: Shifting Balance; Enthusiast PC Gaming Systems Regionally 2008 vs. 2012 (Millions US) (Source: Jon Peddie Research) 13

Figure 8: The Top Enthusiast PC Gaming Hardware Markets (Millions U.S., Source: Jon Peddie Research) 15

Figure 9: Regional Breakdown of the Total Enthusiast PC Gaming Hardware Market (Source: Jon Peddie Research) 16

Figure 10: Halo Effect: The Influence of Brand Image in Relation to Gaming (Source: Jon Peddie Research) 17

Figure 11: Approximations of Various Processing Intensity Levels Required by Various Genre’s for Enthusiast Gaming PCs (Source: Jon Peddie Research) 20

Figure 12: Block diagram of ATI/AMD’s RV770 GPU (Source AMD) 22

Figure 13: Block diagram of Nvidia’s GTX 200 GPU (Source Nvidia) 23

Figure 14: AMD system boards with four AIBs (Source AMD) 24

Figure 15: Nvidia system board with three AIBs (source Nvidia) 24

Figure 16: Basic contemporary Intel PC architecture (Source: Jon Peddie Research) 25

Figure 17: Basic contemporary AMD PC architecture (Source: Jon Peddie Research) 26

Figure 18: Next generation Intel PC architecture (Source: Jon Peddie Research) 27

Figure 19: AMD’s hybrid PC architecture (Source: Jon Peddie Research) 28

Figure 20: Intel’s future co-processor Larrabee will accelerate some graphics functions (Source: Jon Peddie Research) 29

Figure 21: Comparison of a high end PC with IGP to a low end PC with graphics add-in board. 31

Figure 22: Comparison of a high end PC with a high end AIB to a low end PC with a high end AIB 32

Figure 23: Comparison of a high end PC with a high end AIB to a midrange PC with midrange AIB 33

Table of Tables

Table 1: World Market for Enthusiast Gaming AIBs in millions of US dollars. The top six countries represent almost two thirds of world demand (Source: Jon Peddie Research) 8

Table 2: The Enthusiast PC DIY Market by Region (Millions \$US., Source: Jon Peddie Research) 10

Table 3: World Market Enthusiast Gaming PC’s Unit Equivalent Breakdown (Source: Jon Peddie Research) 13

Table 4: The World Market for System Configured Enthusiast Gaming PCs (Millions US) (Source: Jon Peddie Research) 14

Table 5: The World Market for Enthusiast Gaming PCs (Millions US) (Source: Jon Peddie Research) 14

Executive Summary

This report covers the hardware TAM for Enthusiast Gaming PCs, AIBs, and peripherals for major international regions and specific countries within these regions.

The report is a combination of top down and bottom up analysis. The Top-down portion of the report analyzes hardware based on GPU/AIB shipments and subsequent PC shipments from 2008 to 2012. It is also based on various macro financial analysis and growth rates.

The Bottom-up portion is based on the strength of PC gaming in individual countries worldwide and also the type of gaming popular in various cultures.

The Appendix offers a detailed step by step methodology and an architecture discussion. There is an extensive index.

Countries Examined

United States
South Korea
Japan
China
Germany
United Kingdom
France
Italy
Canada
Australia
Switzerland
Russia
Spain

India
Netherlands
Brazil
Mexico
Hong Kong
Poland
Belgium
South Africa
Austria
Sweden
Denmark
Greece
Turkey

Argentina
Indonesia
Czech Republic
Thailand
Algeria
Malaysia
Romania
Hungary
Chile
Portugal
Colombia

Methodology

This is in general a supply-side report. Data for it comes from the suppliers of PC gaming systems and software as well as the component suppliers to those system sellers, as well as retail channels. We constantly survey the semiconductor, software, and ODM suppliers in the course of our business. We have also relied on company reports and presentations for some of the information.

Primary research for this report

- Interviews, phone calls, e-mails, and faxes with managers, engineers, and marketers of PC system integration companies.
- Interviews with executives and employees of component suppliers to system integrators.
- Interviews with employees of e-tail and retail channels.
- Interviews of software vendors, and technology providers about pc gaming products and services.
- Interviews with investors and financial analysts following the semiconductor and pc markets.
- Telephone and e-mail interviews with related and associative companies that are working to develop accessories and peripherals for the PC gaming industry.
- Surveys of PC gamers and PC purchasers.

Secondary research for this report

- An analysis of a collection of publicly available data, annual reports and other financial filings.
- An analysis of publicly available market information from agencies, consortiums, and trade organizations.
- Background research of the technology issues surrounding PC gaming products, as well as consumer media and content and multimedia broadband services and infrastructure.

The market for PC Gaming Systems and After-Market AIB's is complex and requires a fairly detailed methodology to analyze. Below we have bulleted key factors and influences that we incorporate into this analysis. An in-depth, step by step methodology can be found in the Appendix.

- PC Gaming Software, Services, and Peripheral Revenue
- Gaming Cultures (Popularity of certain Games and Genres in various Countries)
- Processing Intensity Levels (Stress of specific Games and Genres on AIBs and Systems)
- Wealth Demographics
- Economic Growth
- Population Growth
- PC and AIB Growth
- PC Gaming in relation to Console Gaming
- Home and Personal Use in relation to Business and Office Use
- Gaming Motivation in relation to Total PC Purchase Motivation

Definitions

This report is one of three that comprises the total worldwide market potential PC gaming systems which consists of new branded PCs, White box PCs, after-market add-in boards (AIBs), do it yourself (DIY) systems, and gaming influenced accessories and peripherals.

The series of reports consists of the Enthusiast, Performance, and Mainstream segments. The definitions for those segments are as follows.

Enthusiast segment

Compared to the overall PC market, the Enthusiast segment accounts for only a relatively small number of unit shipments. However, those systems are among the most expensive and deliver very healthy margins. Enthusiast-class AIBs deliver the highest possible performance and offer the enthusiast or *hobbyist* the ability to tweak the AIB (e.g. with special cooling and clock manipulation) to exceed the published specifications.

Enthusiasts pay very little attention to price tags. If the PC or AIB promises the best gaming experience they will be bought, and MSRPs in the category aren't declining. In fact, recent top-end PCs and AIBs on the market have been gaining in price. In our analysis we use Enthusiast AIB's as the cornerstone but also account for Enthusiast systems as a pricing segment with an average of \$2450 including a monitor factor adjusted for gaming motivation and purchasing frequency.

Performance segment

The Performance computer segment isn't so clear-cut. Some like JPR treat it separately from the higher end Enthusiast category, and others include the Enthusiast category within the Performance segment.

There is overlap between the two, but one of the major points of distinction is that performance machines are sold into the broader markets, advertised as machines for entertainment or high-end professional use. In addition, they are equipped with newer, high-performance graphics chips, but typically not the most powerful.

Often, the performance sector AIBs are the previous generation's Enthusiast AIB, but they are also built up on lower-cost GPU derivatives of the current top-end GPU part. In our analysis we use Performance AIB's as the cornerstone but also account for Performance systems as a pricing segment with an average of \$1464 including a monitor factor adjusted for gaming motivation and purchasing frequency.

Mainstream segment

The mainstream category is the largest unit volume and the lowest performance segment. The AIBs used in these systems can be either specially designed (to reduce cost), older generation models, or special versions with GPUs that are higher end but have not passed all the tests to be in the higher classifications (this is one way GPU suppliers manage fab yields and inventory

costs.) Mainstream systems and AIBs offer solid capabilities for Internet, gaming, and office productivity applications. We include Value PC's and GPU's in the Mainstream segment. Regardless of their budget people of all economic levels love video games and they serve to influence PC purchases even at the lowest level.

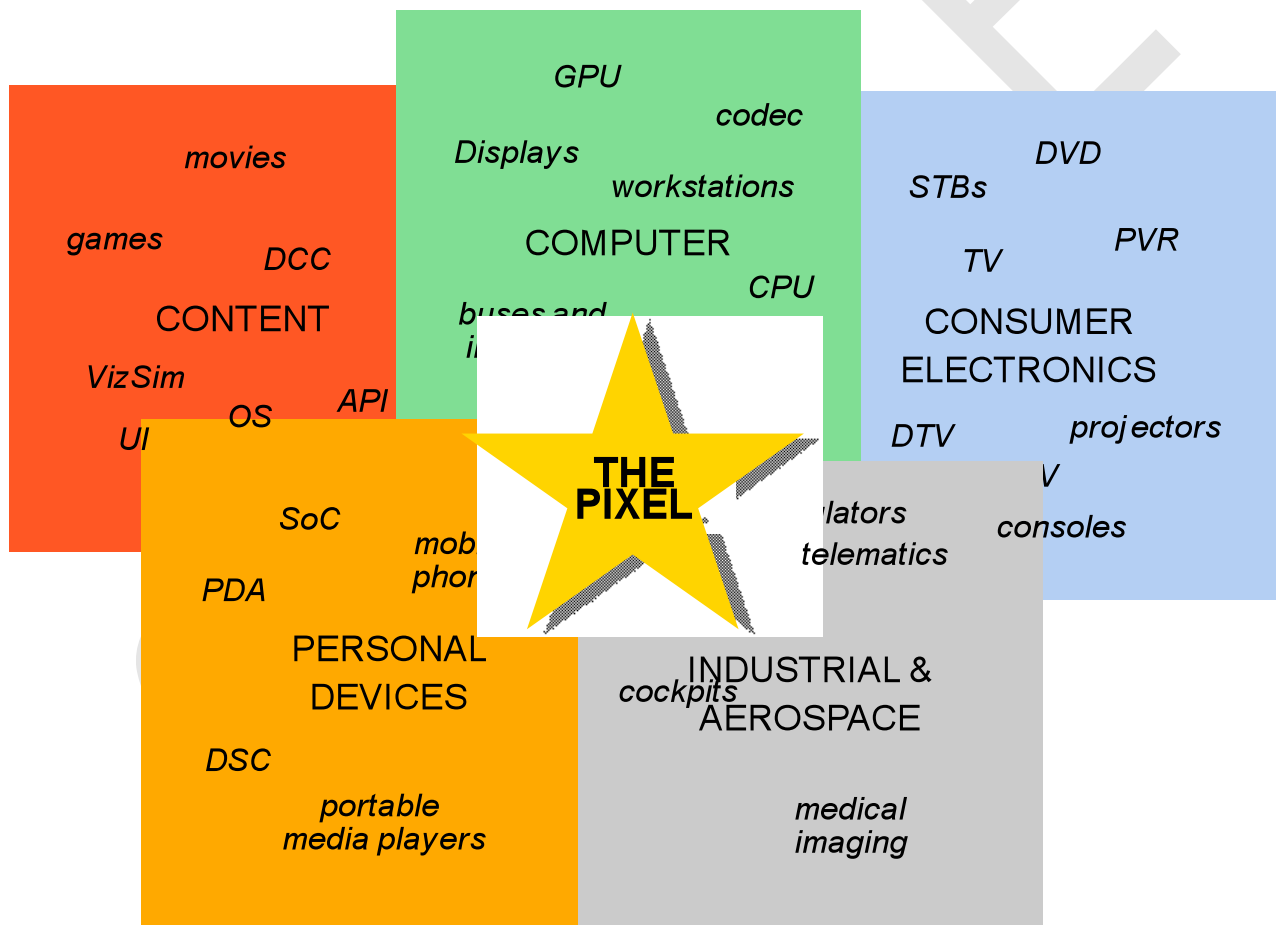
In our analysis we use Mainstream and Value AIB's as the cornerstone but also account for Mainstream systems as a pricing segment with an average of \$714 including a monitor factor adjusted for gaming motivation and purchasing frequency.

SAMPLE

About Jon Peddie Research

- Founded in 2001 – but it’s our 24th year
- Focus and emphasis on Digital Technology, Multi Media, and Graphics
- Consulting and market research - Advisor to industry leaders and financiers
- Bi-weekly, Quarterly, and various Digital Technology Market Reports and Studies

The Business of Multimedia and Graphics



We Chase the Pixel

Introduction

The Enthusiast gamer is defined as a game player with experience and commitment who buys a computer with the majority of intent of using it to play games, and has a high budget for this purchase. By definition such a computer is a very capable of running an office productivity suite and performing on the internet. The questions the Enthusiast gamer is likely to ask are:

- Will this machine offer game performance that far surpasses that of a console?
- Does the machine have styling features that appeal to me?
- Is it solidly engineered for heat mitigation and durability?
- Is it customizable?

Quite often, there is also an interest in peripheral activities such as, will it handle digital media editing?

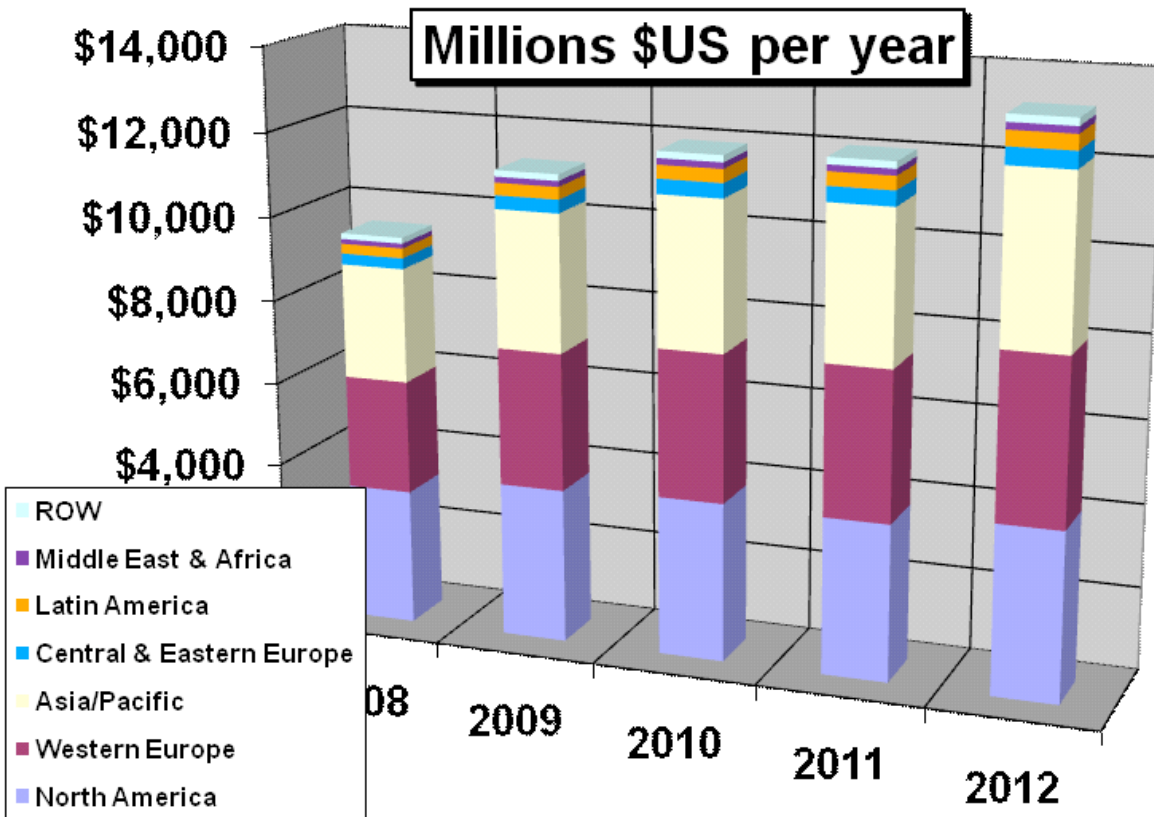


Figure 1: The Worldwide Enthusiast PC Gaming Hardware Market (Source: Jon Peddie Research)

In this report, JPR looks at the influence of video games on the international market for Enthusiast PC purchases and calculates the market TAM worldwide. Our report “The International Market for Enthusiast Gaming Systems” also estimates how fast these markets will grow.