



# Amazon's Web Services Initiative

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# Introduction & Background

- > Software development background
- > Veteran of several startups
- > Visual Studio team at Microsoft
- > 3+ Years with Amazon
- > Amazon Web Services Developer Relations Team



# Agenda

Background & Introduction

Amazon Associates Program Introduction

Amazon Web Services Introduction

Amazon Web Services:

- Amazon E-Commerce Service

- Alexa Web Information Service

- Alexa Web Search Platform

- Amazon Mechanical Turk

Getting Started

Questions



# What is Amazon?

- > Online Retailer:
  - Over 52 million active customer accounts
  - Seven countries: US, UK, Germany, Japan, France, Canada, China
- > Technology Provider:
  - Hundreds of thousands of Amazon Associates
  - Over 1,000,000 active seller accounts
  - Over 140,000 software developers registered to use AWS



# The Amazon Associates Program

- > Launched in 1996
- > Hundreds of thousands of associates
- > Earn 4 - 10% commission for driving traffic to us
- > Text links, banners, Flash, web services
- > Online reporting





# The Web Services Concept

- > The Programmable Web Site:
  - Support for industry standards – XML, XSLT, SOAP
  - Remote access to data and functionality
  - Decoupling of data and presentation
  - Unlocking developer creativity
  - Creation of a platform to attract software developers
  - Leveraging our technology investment



# AWS - Amazon Web Services!

- > AWS is the developer interface to Amazon.com
- > AWS consists of a set of Application Programming Interfaces (APIs) that give any developer outside of Amazon programmatic access to Amazon's data and technology:
  - Product information
  - Customer-created content
  - Amazon's shopping cart
  - Data warehouse
  - Building-block services



# AWS Product Family

- > **MT – Mechanical Turk**
  - Artificial Artificial Intelligence
  - Internet-scale workforce
- > **AWIS – Alexa Web Information Service**
  - Data warehouse access for web crawl data
- > **AHP – Amazon Historical Pricing**
  - Data warehouse access for product pricing
- > **AWSP – Alexa Web Service Platform**
  - Roll your own search engine
- > **SQS – Simple Queue Service**
  - Application building block
- > **ECS – E-Commerce Service**
  - Complete access to Amazon's product catalog

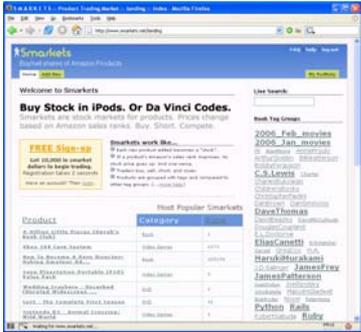
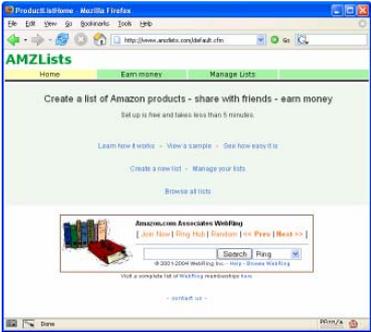


# Our Offering

- > SOAP API
- > REST API
- > XSLT Transformation Service
- > WSDL
- > Schema
- > Extensive Documentation (Online, PDF, CHM)
- > Developer Bulletin Board
- > Developer Community
- > Newsletter

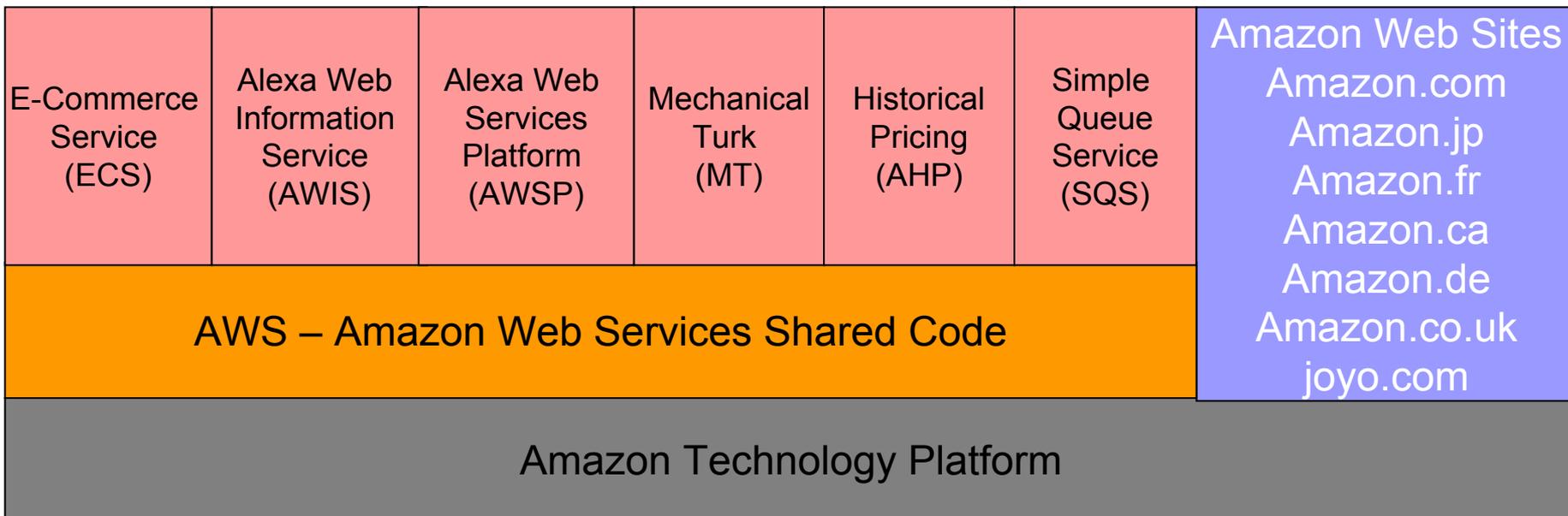
# Who Uses AWS?

- > Over 140,000 Developers
- > Amazon Associates
- > Amazon Marketplace Sellers
- > Amazon Merchant Partners
- > Integrators and Solution Providers
- > Entrepreneurs





# AWS Architecture





# Amazon E-Commerce Service (ECS)

- > 4<sup>th</sup> major release
- > Complete access to the Amazon product catalog
  - Millions of products
  - Rich data schema
  - Product images
  - Reviews
- > Shopping cart
- > Wishlists
- > Link to Amazon Associates program



TVmojo.com: Electronics: All TVs - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.tvmojo.com/

TVmojo.com: Electronics: All TVs

 **THE TV SUPERSTORE**

"If it weren't for Philo T. Farnsworth, inventor of television, we'd still be eating frozen radio dinners."  
- Johnny Carson

HOME CUSTOMER SERVICE WHO WE ARE RESOURCES LINKS CONTACT

Home Electronics **DVDs** VHS Camera & Photo Office Products

Search  Electronics  [Advanced Search](#) [View Cart](#) [Checkout](#)

Location: Home > Electronics > All TVs September 8, 2005

**TV & HDTV**

- Analog TVs
- Flat-Panel TVs
- HDTVs
- Home Projectors
- LCD TVs
- Plasma TVs
- Portable TVs
- Projection TVs
- TV-DVD Combinations
- TV-VCR Combinations
- All TVs

**Browse By Size**

- Up to 5-Inch
- 6-Inch to 13-Inch
- 14-Inch to 19-Inch
- 20-Inch to 26-Inch
- 27-Inch to 30-Inch
- 31-Inch to 35-Inch
- 36-Inch to 40-Inch
- 41-Inch and Over

**Browse By Brand**

- Gateway
- JVC
- Panasonic
- Philips
- Samsung
- Sharp
- Sony
- Sylvania
- Toshiba
- Zenith
- Westinghouse

**All TVs**

Sort by: Bestselling

Showing items: 1-10 of 3110  
1 2 3 4 5 6 ... [NEXT >](#)

**Samsung HPR-R5072 50" Widescreen Flat Panel HD-Ready Plasma TV**



**List Price:** ~~\$4,399.99~~  
**Buy New:** **Too low to display**

**Buy New (Marketplace):** from \$2,390.00

Avg. Customer Rating:  (based on 1 reviews)  
Sales Rank: 137  
Category: CE  
Brand: [Samsung](#)  
Number Of Items: 1  
Shipping Weight (lbs): 132  
Dimensions (in): 19 x 63 x 39  
Model: HPR5072  
UPC: 036726260406  
ASIN: B0009PVXD4  
Availability: Usually ships in 1 to 2 weeks

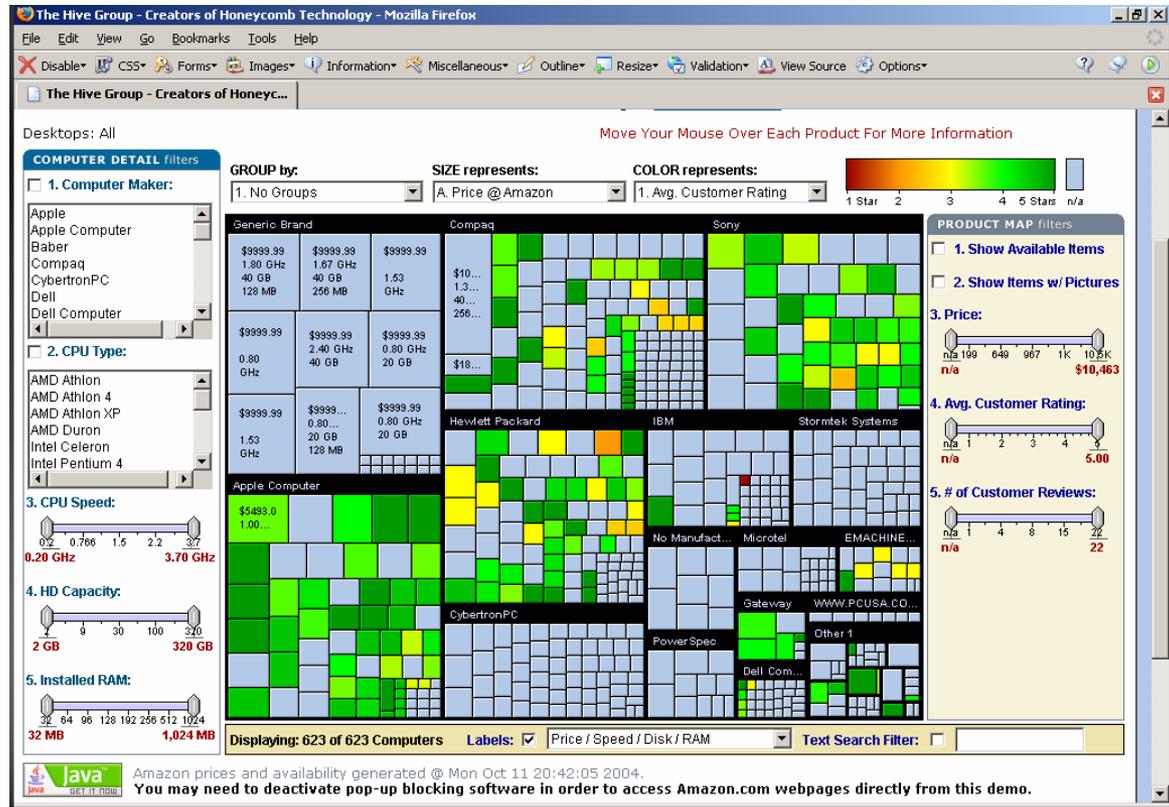
**Syntax Olevia LT37HVE 37" Widescreen HD-Ready LCD TV**



**List Price:** ~~\$3,299.99~~  
**Buy New:** **\$1,599.49**  
**You Save:** \$1700.50 (52%)

Buy New (Marketplace) from \$699.00

Done PR:3 



The screenshot shows a Java applet interface for 'The Hive Group - Creators of Honeycomb Technology' running in a Mozilla Firefox browser. The interface displays a large grid of computer products, where each cell's color represents a different attribute. The grid is organized by manufacturer (Generic Brand, Compaq, Sony, Hewlett Packard, IBM, Stormtek Systems, Apple Computer, CybertronPC, PowerSpec, Gateway, Dell Com..., Other 1) and sorted by price. The interface includes several interactive filters and controls:

- COMPUTER DETAIL filters:**
  - 1. Computer Maker: Apple, Compaq, Dell, etc.
  - 2. CPU Type: AMD Athlon, Intel Pentium, etc.
  - 3. CPU Speed: 0.20 GHz to 3.70 GHz
  - 4. HD Capacity: 2 GB to 320 GB
  - 5. Installed RAM: 32 MB to 1,024 MB
- GROUP by:** 1. No Groups
- SIZE represents:** A. Price @ Amazon
- COLOR represents:** 1. Avg. Customer Rating
- PRODUCT MAP filters:**
  - 1. Show Available Items
  - 2. Show Items w/ Pictures
  - 3. Price: n/a to \$10,463
  - 4. Avg. Customer Rating: n/a to 5.00
  - 5. # of Customer Reviews: n/a to 22

At the bottom, it states 'Displaying: 623 of 623 Computers' and 'Labels: Price / Speed / Disk / RAM'. A Java logo is visible in the bottom left corner of the applet area.

- > Rich, responsive UI
- > Thousands of items

- > Java applet
- > Multidimensional query

liveplasma music, movies, search engine and discovery engine - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.liveplasma.com/

liveplasma music, movies, search eng...



Search:

Artist / Band

Movie Director Actor

The Rolling Stones

OTHER RESULTS

LAST MAPS

DISCOGRAPHY

The Rolling Stones on amazon.com

-  A Bigger Bang 2005
-  Jump Back: The Best of the Rolling Stones 1971-1993 2004
-  Live Licks (topless cover) 2004

DESIGN

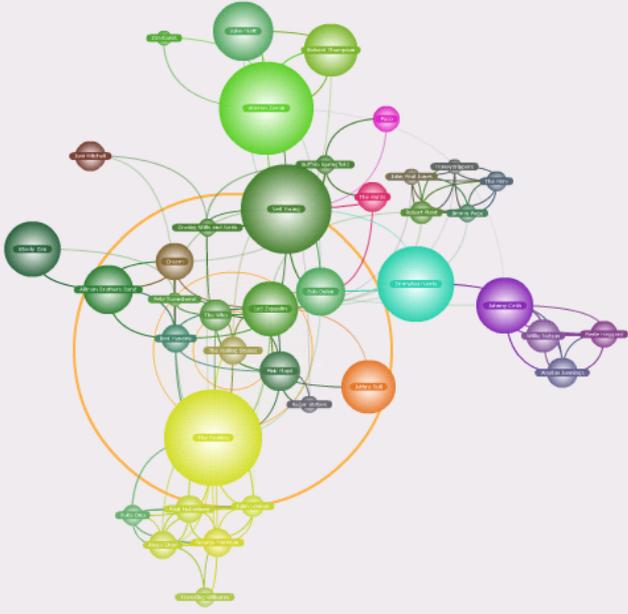
HELP

MEMBERS ZONE

Email address

Password

Why should I register?



Transferring data from images.amazon.com...

PR: 6

Guitar Picker - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.coverpop.com/pop/guitars/

### every guitar on amazon

- a coverpop by jim bumgardner, of crazydad.com
- guitars from amazon.com
- move the mouse over the guitars to see more information, click for amazon
- guitars are arranged horizontally by price, expensive ones to the right
- this image is now available as a mousepad

"After the full 5 minutes of laughing at the guy's name [Bumgardner], I think I have to agree that the page is genius. The almost perfect browsing experience."  
--Sean Elliot -- Music Thing

Takamine EGS430SC  
Takamine  
from \$459.00  
click to learn more  
or buy it at amazon.com

coverpop

magazines & books

dvd / cd

musical instruments

- guitars <--
- guitar fx
- all your bass
- hand drums
- keys & synths
- string quartet
- brass & woodwinds
- world / ethnic

fun & games

gifts & apparel

what's new

- faq
- make a banner
- contact me

puzzle me!

more stuff at crazydad.com

Ads by Goooooogle

**1-800-CHARITY CARS**  
The original, 100% non-profit. You Can Still Receive Full Retail Value  
www.800.charitycars.org

**Donate Car - Fast & Easy**  
We handle it all. Tax Deductible. Call toll-free today 1-800-974-7126  
www.donate-a-car.org

fun new coverpops are coming. subscribe to my blog (krazydad) to hear about 'em.

http://www.coverpop.com/faq/

PR:0

S M A R K E T S :: Product Trading Market :: landing :: index - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.smarkets.net/landing

---

**Smarkets** Buy/sell shares of Amazon Products

Home **Add New** My Portfolio

FAQ help log out

---

Welcome to Smarkets

## Buy Stock in iPods. Or Da Vinci Codes.

Smarkets are stock markets for products. Prices change based on Amazon sales ranks. Buy. Short. Compete.

**FREE Sign-up**

Get 10,000 in smarket dollars to begin trading. Registration takes 2 seconds

Have an account? Then [login](#).

**Smarkets work like...**

- Each new product added becomes a "stock".
- If a product's Amazon's sales rank improves, its stock price goes up. And vice-versa.
- Traders buy, sell, short, and cover.
- Products are grouped with tags and compared to other tag groups. (... [more help](#))

---

Most Popular Smarkets

Product	Category	Rank
<a href="#">A Million Little Pieces (Oprah's Book Club)</a>	Book	1
<a href="#">Xbox 360 Core System</a>	Video Games	6273
<a href="#">How To Become A Porn Director: Making Amateur Ad...</a>	Book	205298
<a href="#">Sony Playstation Portable (PSP) Value Pack</a>	Video Games	5
<a href="#">Wedding Crashers - Uncorked (Unrated Widescreen ...</a>	DVD	2
<a href="#">Lost - The Complete First Season</a>	DVD	11
<a href="#">Nintendo DS - Animal Crossing: Wild World</a>	Video Games	1
<a href="#">Nintendo DS</a>	Video Games	68
<a href="#">The Chronicles of Narnia Boxed Set</a>	Book	8
<a href="#">Life of Pi</a>	Book	203
<a href="#">The World Is Flat: A Brief History of the Twenty...</a>	Book	3
<a href="#">Elder Scrolls 4: Oblivion (DVD)</a>	Video Games	573
<a href="#">Serenity (Widescreen Edition)</a>	DVD	2

**Live Search:**

**Book Tag Groups**

**2006 Feb movies**

**2006 Jan movies** [Al](#) [AlanMoore](#) [AnnieProulx](#) [ArthurGolden](#) [BillWatterson](#) [BobbyFerguson](#) **C.S.Lewis** [Charles](#) [CharlesBukowski](#) [ChildrensBooks](#) [ChristopherPaolini](#) [DanBrown](#) [DanSimmons](#) **DaveThomas** [DavidBeazley](#) [DavidMcCullough](#) [DouglasCoupland](#) [E.L.Doctorow](#) **EliasCanetti** [ErikHatcher](#) [Gerald](#) [GregCox](#) [H.A.](#) **HarukiMurakami** [J.D.Salinger](#) **JamesFrey** **JamesPatterson** [JoanDidion](#) [JoelSpolsky](#) [JohnBatelle](#) [MalcolmGladwell](#) [NickRyder](#) [Novel](#) [PeterHoeg](#) **Python** **Rails** [RobertSabuda](#) **Ruby** [RubyonRails](#) [StephenKing](#) **TeeJayEmm** [TomChristiansen](#) [Various](#) [business](#) **economics** [fantasy](#) [friedman](#) [globalization](#)

PR:0



# Alexa Web Information Service

- > Alexa Web Information Service
- > Access to 300 TB of Alexa crawl data
- > 10 billion web pages
- > 5 functions:
  - Crawl
  - Search
  - Url Info
  - Category
  - Web Map



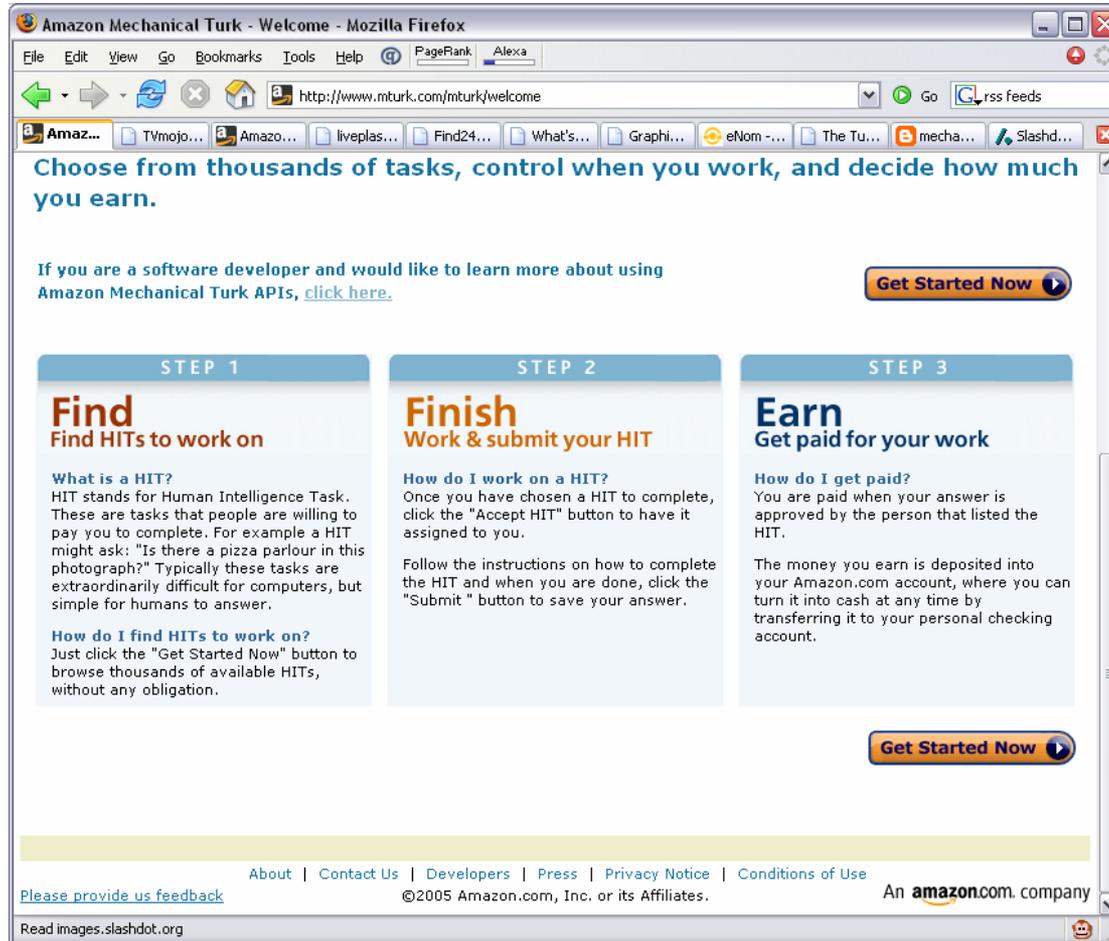


# Alexa Web Search Platform

- > Build your own search engine!
  
- > 3 Steps:
  - Specify pages to access within the 300TB archive.
  - Write parallelizable application to process these pages.
  - Publish results as XML feed or as web service.
  
- > Pricing – everything costs \$1:
  - 50 GB of data processing
  - 1 CPU Hour
  - 1 GB of data downloaded
  - 4000 web service requests



# The Amazon Mechanical Turk



**Amazon Mechanical Turk - Welcome - Mozilla Firefox**

File Edit View Go Bookmarks Tools Help PageRank Alexa

http://www.mturk.com/mturk/welcome

Choose from thousands of tasks, control when you work, and decide how much you earn.

If you are a software developer and would like to learn more about using Amazon Mechanical Turk APIs, [click here](#). **Get Started Now**

STEP 1	STEP 2	STEP 3
<h3>Find</h3> <p><b>Find HITs to work on</b></p> <p><b>What is a HIT?</b> HIT stands for Human Intelligence Task. These are tasks that people are willing to pay you to complete. For example a HIT might ask: "Is there a pizza parlour in this photograph?" Typically these tasks are extraordinarily difficult for computers, but simple for humans to answer.</p> <p><b>How do I find HITs to work on?</b> Just click the "Get Started Now" button to browse thousands of available HITs, without any obligation.</p>	<h3>Finish</h3> <p><b>Work &amp; submit your HIT</b></p> <p><b>How do I work on a HIT?</b> Once you have chosen a HIT to complete, click the "Accept HIT" button to have it assigned to you.</p> <p>Follow the instructions on how to complete the HIT and when you are done, click the "Submit" button to save your answer.</p>	<h3>Earn</h3> <p><b>Get paid for your work</b></p> <p><b>How do I get paid?</b> You are paid when your answer is approved by the person that listed the HIT.</p> <p>The money you earn is deposited into your Amazon.com account, where you can turn it into cash at any time by transferring it to your personal checking account.</p>

**Get Started Now**

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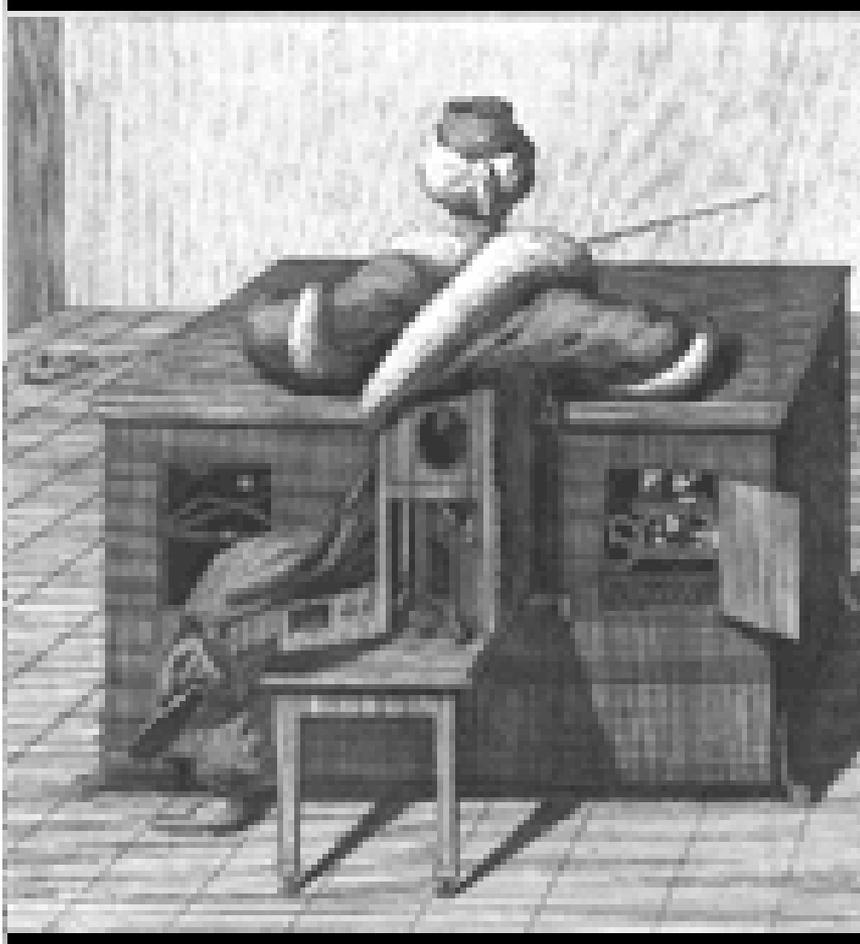
[Please provide us feedback](#) ©2005 Amazon.com, Inc. or its Affiliates. An **amazon.com** company

Read images.slashdot.org





# The Original Mechanical Turk





# Amazon's Concept

- > Humans still outperform computers at completing simple tasks (e.g. object in a photo)
- > What if a computer could ask a human to perform a task and return a result?
- > What if the computer could coordinate many human beings to perform a task?
- > Amazon Mechanical Turk provides an API for computers to integrate "artificial artificial intelligence" into a new wave of applications



# What is Amazon Mechanical Turk?

- > Web service that allows developers programmatic access to incorporate human intelligence into their applications
- > Web service will allow businesses and entrepreneurs to efficiently complete thousands, even millions of tasks that require human intelligence
- > The Amazon Mechanical Turk Website allows virtually anyone to make money by completing tasks using the skills they already have and whenever their schedule allows

# A9.COM BlockView Technology



Walk Left



Walk Right

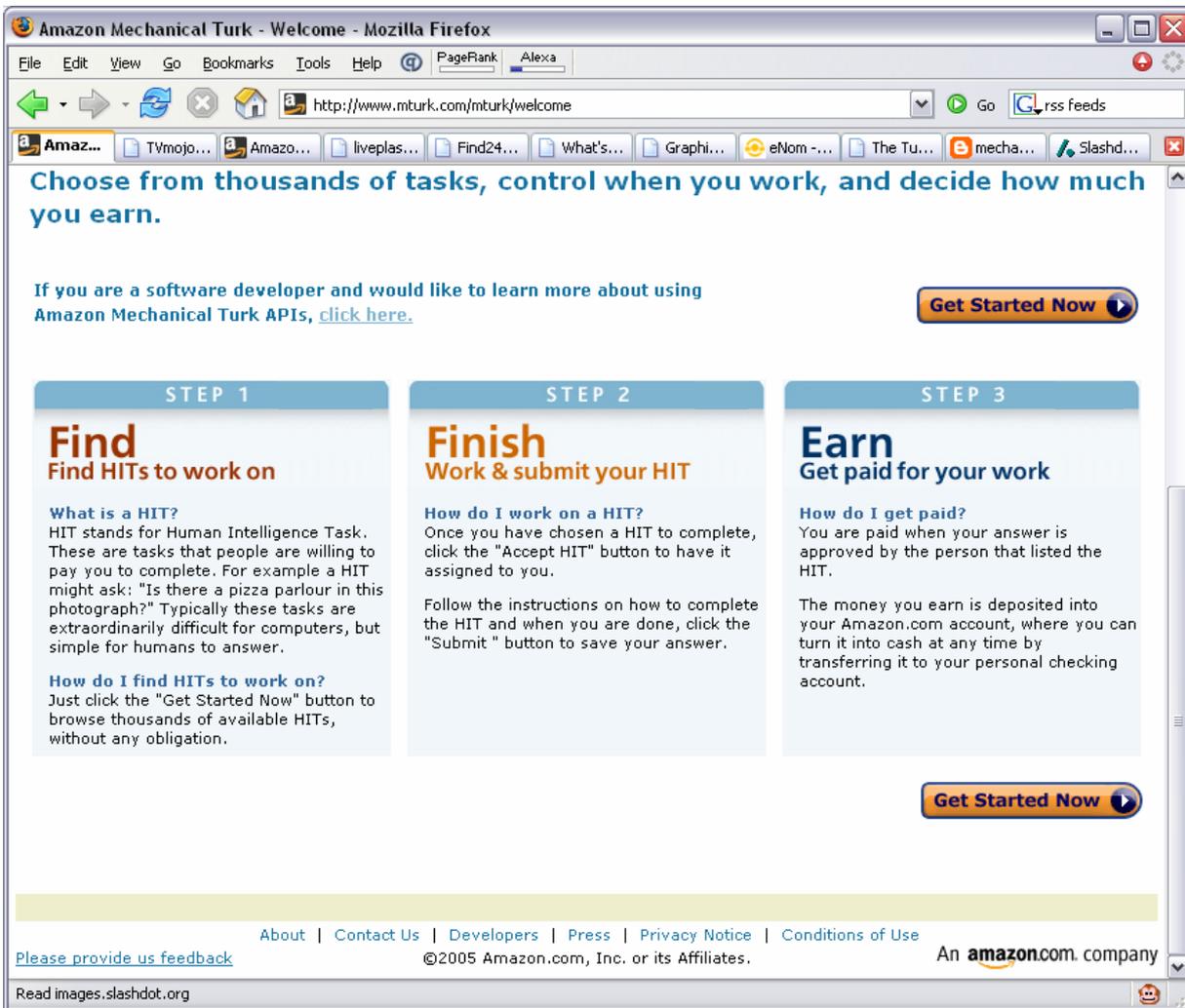


Lyman Bushman

See more in the



Done



Amazon Mechanical Turk - Welcome - Mozilla Firefox

File Edit View Go Bookmarks Tools Help PageRank Alexa

http://www.mturk.com/mturk/welcome

Choose from thousands of tasks, control when you work, and decide how much you earn.

If you are a software developer and would like to learn more about using Amazon Mechanical Turk APIs, [click here](#). [Get Started Now](#)

**STEP 1**

### Find

Find HITs to work on

**What is a HIT?**  
HIT stands for Human Intelligence Task. These are tasks that people are willing to pay you to complete. For example a HIT might ask: "Is there a pizza parlour in this photograph?" Typically these tasks are extraordinarily difficult for computers, but simple for humans to answer.

**How do I find HITs to work on?**  
Just click the "Get Started Now" button to browse thousands of available HITs, without any obligation.

**STEP 2**

### Finish

Work & submit your HIT

**How do I work on a HIT?**  
Once you have chosen a HIT to complete, click the "Accept HIT" button to have it assigned to you.

Follow the instructions on how to complete the HIT and when you are done, click the "Submit" button to save your answer.

**STEP 3**

### Earn

Get paid for your work

**How do I get paid?**  
You are paid when your answer is approved by the person that listed the HIT.

The money you earn is deposited into your Amazon.com account, where you can turn it into cash at any time by transferring it to your personal checking account.

[Get Started Now](#)

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Read images.slashdot.org

Amazon Mechanical Turk - All HITs - Mozilla Firefox

File Edit View Go Bookmarks Tools Help PageRank Alexa

http://www.mturk.com/mturk/findhits?match=false

Amazon Mechanical Turk Artificial Intelligence

Welcome | **HITs** | Qualifications

Jeff S Barr | Dashboard | Your Account | FAQ | Sign Out

All HITs | **HITs Available To You** | HITs Assigned To You

Search: HITs  GO!

All HITs 1-10 of 13 Results

Sort by: Reward Amount (least first)  GO! Show all details | Hide all details 1 2 > Next >> Last

A9 BlockView(tm) Image Adjustment -- Oakland, CA <a href="#">View a HIT in this group</a>			
<b>Requester:</b> Amazon Requester Inc.	<b>HIT Expiration Date:</b> Nov 6, 2005 (13 hours 13 minutes)	<b>Reward:</b> \$0.03	<b>Table:</b> 13
<div style="border: 1px solid black; padding: 2px;"> <p>The date these HITs will expire, and will no longer be available.</p> </div>			
A9 BlockView(tm) Image Adjustment -- San Diego, CA <a href="#">View a HIT in this group</a>			
<b>Requester:</b> Amazon Requester Inc.	<b>HIT Expiration Date:</b> Nov 6, 2005 (1 day 5 hours)	<b>Reward:</b> \$0.03	<b>HITs Available:</b> 355
	<b>Time Allotted:</b> 60 minutes		
A9 BlockView(tm) Image Adjustment -- Denver, CO <a href="#">View a HIT in this group</a>			
<b>Requester:</b> Amazon Requester Inc.	<b>HIT Expiration Date:</b> Nov 12, 2005 (7 days 1 hour)	<b>Reward:</b> \$0.03	<b>HITs Available:</b> 270
	<b>Time Allotted:</b> 60 minutes		
A9 BlockView(tm) Image Adjustment -- Portland, OR <a href="#">View a HIT in this group</a>			
<b>Requester:</b> Amazon Requester Inc.	<b>HIT Expiration Date:</b> Nov 6, 2005 (1 day 5 hours)	<b>Reward:</b> \$0.03	<b>HITs Available:</b> 398
	<b>Time Allotted:</b> 60 minutes		
A9 BlockView(tm) Image Adjustment -- Houston, TX <a href="#">View a HIT in this group</a>			
<b>Requester:</b> Amazon Requester Inc.	<b>HIT Expiration Date:</b> Nov 7, 2005 (1 day 10 hours)	<b>Reward:</b> \$0.03	<b>HITs Available:</b> 628
	<b>Time Allotted:</b> 60 minutes		
A9 BlockView(tm) Image Adjustment -- Seattle, WA <a href="#">View a HIT in this group</a>			

Done

Amazon Mechanical Turk - HITs Assigned to You - Mozilla Firefox

File Edit View Go Bookmarks Tools Help PageRank Alexa

http://www.mturk.com/mturk/preview?groupId=7YFZJWRRTTMZR0YH9WJZ

Amazon ... TVmojo.co... Amazon M... liveplasma... Find24x7 ... What's th... Graphic N... eNom - do... The Turk... mechanica... Slashdot: ...

amazonmechanicalturk Artificial Intelligence

What is Mechanical Turk?

Jeff S Barr | Dashboard | Your Account | FAQ | Sign Out

Welcome   **HITs**   Qualifications

All HITs | **HITs Available To You** | HITs Assigned To You

Timer: 00:00:00 of 60 minutes   Want to work on this HIT?   Want to see other HITs?   Total Earned: \$0.21   Total HITs Submitted: 10

**Accept HIT**   **Skip HIT**

A9 BlockView(tm) Image Adjustment -- San Diego, CA

Requester: Amazon Requester Inc.   Reward: \$0.03 per HIT   HITs Available: 325   Duration: 60 minutes

Qualifications Required: None

**Tariq Khamisa Foundation the -- San Diego, CA**

Please look through the following images that are taken near Tariq Khamisa Foundation the.

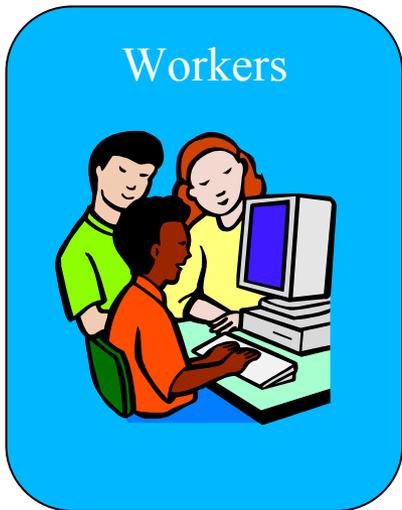
Choose the picture that best represents the storefront. If none of the pictures look good, you can select 'None of the above'.

Location of business: 2550 5th Ave Ste 65, San Diego, CA 92103.

http://www.mturk.com/mturk/findhits?match=true



# Mechanical Turk Workflow





# Some Recent HITS

## > Amazon:

- A9 BlockView – Match an image to a business name.
- Confirm Artist Name – Verify album cover art.
- Extract Product Description – Summarize a product.
- Select Japanese Text Direction – Vertical or horizontal.

## > External:

- Podcast Transcription – Speech to text – [castingwords.com](http://castingwords.com)
- Language Translation – English to French or *vice versa*.
- Web Site Review – Answer questions about a site.
- Run a Marketing Survey – [dryrunner.com](http://dryrunner.com) .

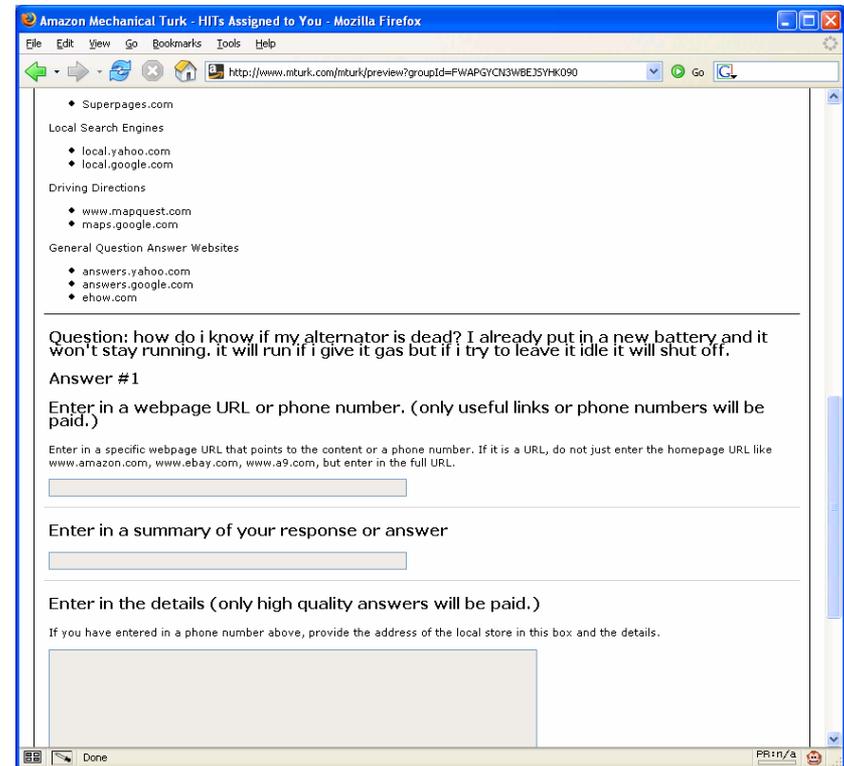


# Mechanical Turk Terminology

- > HIT
- > Requester
- > Worker
- > Qualification

# HIT – Human Intelligence Task

- > Work to be done.
- > Loaded into system via web service call.
- > Discrete, well defined task.
- > HTML User Interface.
- > Protected by Qualifications.





# Requester

- > Individual or Organization with work.
- > Design the work (HITs).
- > Specify worker Qualifications.
- > Deposit funds to Amazon account.
- > Load HITs and Qualifications into Turk.
- > Approve completed HITs.
- > Retrieve results.



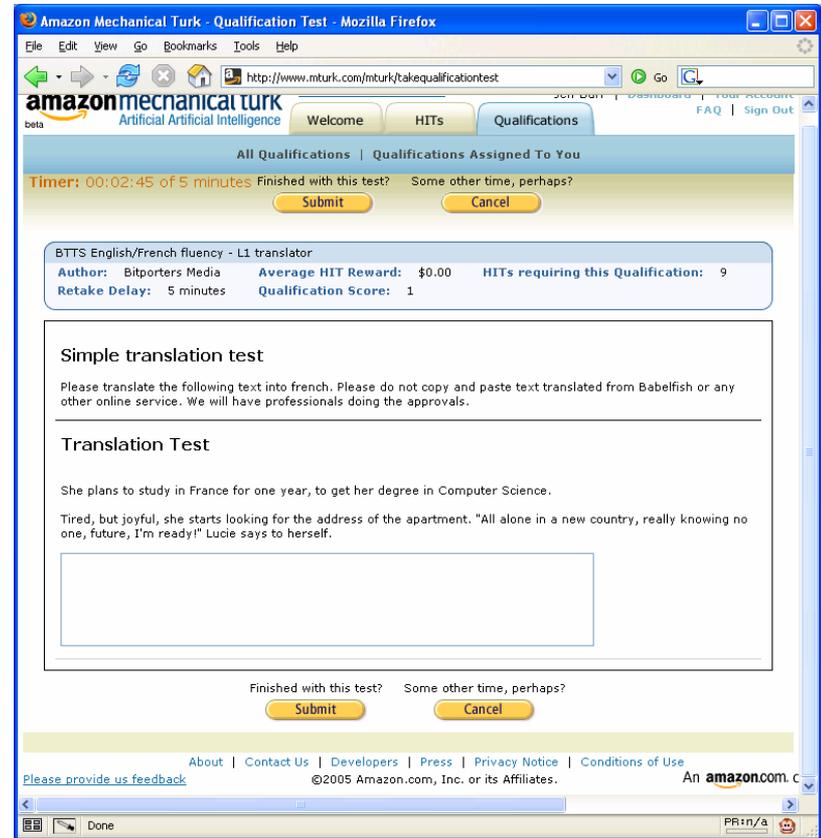
# Worker

- > Register with Amazon.
- > Find interesting HITs.
- > Do HITs.
- > Get paid.



# Qualification

- > “Quiz” to qualify a Worker to do a class of HITs.
- > Multiple choice & answer key.
- > Free text & subjective grading.
- > 0 ... 10 Qualifications per HIT.





# Some Recent HITS

## > Amazon:

- A9 BlockView – Match an image to a business name.
- Confirm Artist Name – Verify album cover art.
- Extract Product Description – Summarize a product.
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## > External:

- Podcast Transcription – Speech to text.
- Language Translation – English to French or *vice versa*.
- Web Site Review – Answer questions about a site.
- Run a Marketing Survey – [www.dryrunner.com](http://www.dryrunner.com) .



# Getting Started With AWS

- > Developer Portal: <http://aws.amazon.com>
- > Associate Site: <http://www.amazon.com/associates>
- > Mechanical Turk: <http://www.mturk.com>
- > Blog: <http://aws.typepad.com>

BOOKS

APPAREL &  
ACCESSORIES

ELECTRONICS

TOYS &  
GAMES

DVD

COMPUTER &  
VIDEO GAMES



SEE MORE  
STORES

# Questions?



# Thanks!

## > Contact Info:

- Jeff Barr
- Web Services Evangelist
- [jbarr@amazon.com](mailto:jbarr@amazon.com)
- <http://aws.typepad.com>