

GameDevelopers
Conference

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Exploring the Design of Online Handheld Games

Important Factors & Considerations

Karthik Bala, CEO

Henry Letteron, Network Programmer

Issam Khalil, Network Programmer



GAME DEVELOPERS CHOICE AWARDS

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About Vicarious Visions

- Leading developer of video games for handheld and home consoles
- Offices in Albany, NY and Mountain View, CA with 140 employees
- Founded in 1994, now part of Activision.
- VV titles have sold over 19MM copies, nearly \$750MM in retail sales.
- We've worked on top selling franchises such as Tony Hawk, Spider-Man, X-Men, Crash Bandicoot, Shrek, Spongebob Squarepants, Finding Nemo, Doom 3 and others.
- Our current primary focus is developing titles for next gen handheld (Nintendo DS, Sony PSP) as well as next gen console systems (PS3, 360, Revolution).
- We're also big believers in online gaming...especially on portable systems

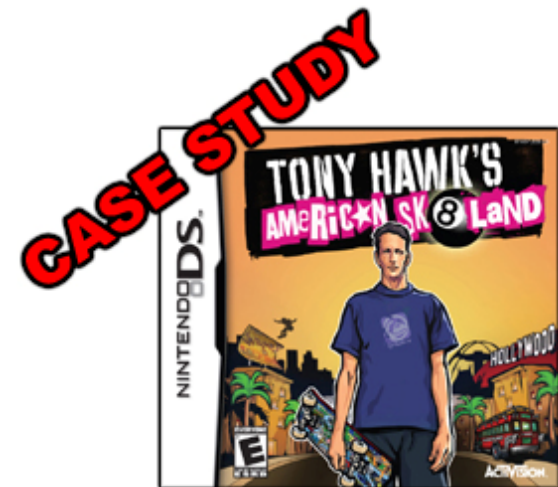
The Future of Handheld Gaming...is Online!

- ④ The potential to unlock new game play experiences
- ④ Handheld online games have the power to change consumer behavior patterns
 - Parallel trends: iPod changing how music is consumed
- ④ Online gaming is becoming massively mainstream.
 - Far greater accessibility/usability
 - Not just on your PC
 - WiFi Networks (Free public WiFi hotspots) rapidly influencing adoption rate
- ④ Finally a significant part of the Big 3's strategy:
 - Microsoft – Xbox Live (Xbox, 360)
 - Nintendo – Nintendo WiFi Connection (DS, Revolution)
 - Sony – Playstation Network Platform (PSP, PS3)

WiFi Online on PSP & NDS



- 🌐 First WiFi Online RPG for PSP
- 🌐 Using Gamespy



- 🌐 First 3rd Party WiFi Online title
- 🌐 Using Gamespy & Nintendo WiFi Connection

Terminology

- ④ Sony PSP
 - ADHOC vs. Infrastructure

- ④ Nintendo DS
 - Local Wireless vs. WiFi
 - DWC
 - Strangers / Friends

X-Men Legends 2 PSP

- ⊗ Developed by Raven software for the XBOX, PS2, and GameCube
- ⊗ Built using Vicarious Visions' Alchemy
- ⊗ Networking framework developed by SuperVillain Studios
- ⊗ First online X-Men Legends game
- ⊗ First online 4 player RPG for the PSP

Tony Hawk's American SK8land

- ⊕ First online third party title for the Nintendo DS
- ⊕ WiFi H2H
- ⊕ Website connectivity (Agora Games)
- ⊕ Full 3D game on the DS

Overview

- ④ Online game design considerations:
 - Number of players
 - Usability
 - Player communication
 - Community
- ④ How do these considerations differ from their console/PC counterpart?
- ④ XML2 and SK8land case studies for each area.

Number of Players *“When is more better?”*

⊕ Areas of consideration:

Legacy constraints

- ⊕ Maintain console-level experience

Budget and time constraints

- ⊕ Only one month to implement online play on SK8land

Memory and CPU constraints

- ⊕ XML2 was designed with consoles in mind
- ⊕ SK8land had a large memory constraint
 - ⊕ 300kb for networking libraries alone (>7% of total memory!)

Debugging

- ⊕ Hardware resources (wireless network, multiple devkits)
- ⊕ QA resources

Number of Players (continued)

System limitations

- ④ 17 PSP limit in ADHOC mode
- ④ Hardware limited polygon count (2,000) on the DS
 - ④ SK8land example: 500 polys per skater (250 culled)
 - ④ 4 skaters would use 1,000 polys (half the budget!)

Expectations

- ④ Console versus handheld, PSP versus DS
- ④ Console port

Time to configure and launch a game

- ④ More players equal longer delays

Player disconnections

- ④ More common on wireless networks
- ④ More common on handheld games

Number of Players

⊕ Existing Design:

4 players onscreen at once

ADHOC and Infrastructure modes

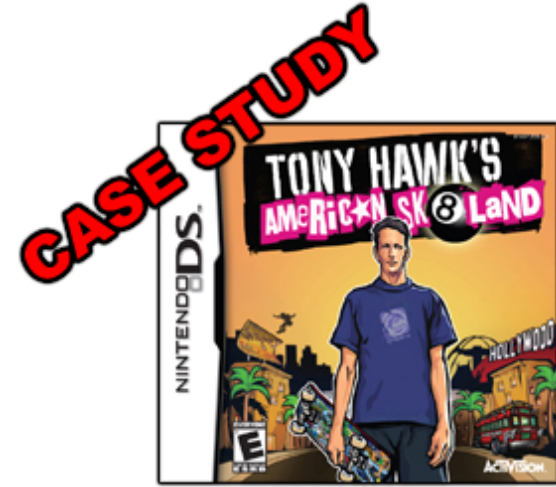
⊕ Future Possibilities:

Maintain existing 4 player experience

Incorporate more sophisticated player/player
and player/environment interactions



Number of Players



Existing Design:

- 2 player local wireless and WiFi game modes
- No player/player collisions or prediction

Future Possibilities:

- 4 player local wireless and WiFi
- Add player/player collisions
- Play against downloadable ghosts

Usability *“How smooth is the player experience?”*

⊕ Areas of consideration:

Translating console UI to handheld systems is hard!

- ⊕ Limited screen size, and thus limited information

Allow the user to enter the game quickly

- ⊕ Control and flexibility versus speed
- ⊕ Know your target audience

Usability: XML2 Online UI Flow

- ⊕ Geared towards a more hardcore audience
 - Deeper, more complex UI, with numerous options

Usability: SK8land Online UI Flow

- ⊕ Geared towards a more casual audience
 - Auto-match features with fewer options available

Usability (continued)

Player disconnections are common, and both the UI and game design should account for this

- ④ Wireless networks are often less dependable
- ④ Duration of play on handhelds is typically short
- ④ Batteries die

Usability

⊕ Existing Design:

4 players onscreen at once

⊕ Colored rings used for differentiation



Usability (continued)

Allowed user to select their region & server

- ⊕ Displays the number of active/allowed players



Didn't provide latency information

No join in progress

- ⊕ Server browser didn't display games that had already started
 - ⊕ Creates a perceptual issue that people are not playing

Usability (continued)

⊕ Future Possibilities:

Easier server browsing experience

Allow players to join games in progress

Show more player information

Allow the user to see latency

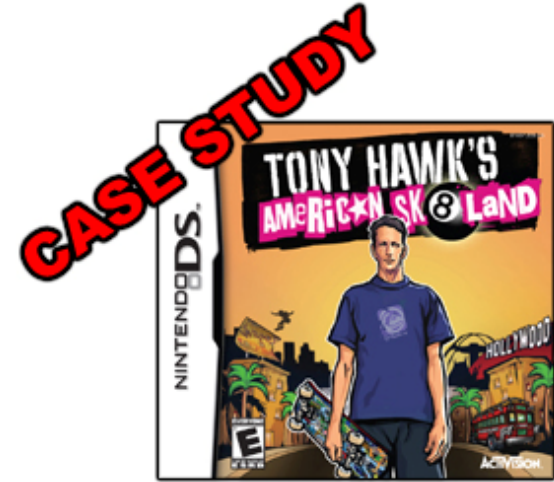
⊕ More informed server choices

Allow the user to see full servers

⊕ Give appearance that people are actively playing



Usability



⊕ Existing Design:

- Easy way to connect

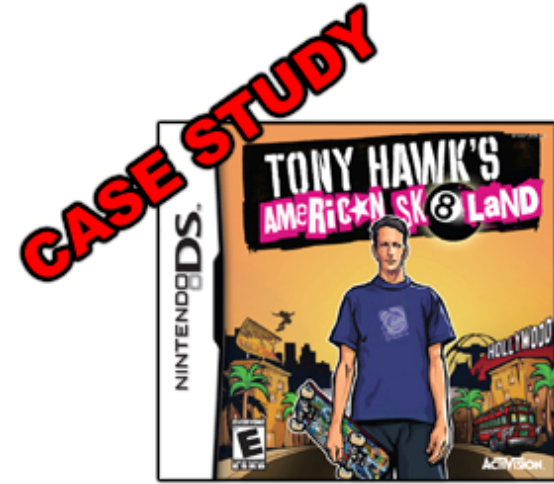
- No server browsing (auto-match only)

- Tons of options, but not laid out well

 - ⊕ Overwhelming to players

- Friend matching was not easy to understand

Usability (continued)



⊕ Future Possibilities:

Advanced auto-match feature when playing WiFi

⊕ Auto-match takes into account latency, skill

Additional gameplay options with a more streamlined UI

Friend game requests

Player Communication

“Facilitating teamwork.”

⊕ Areas of consideration:

Communication on a handheld is tricky

- ⊕ Text entry: limited screen size, slow to type
- ⊕ Voice chat: potential memory & CPU restraints
 - ⊕ Built-in microphone on the DS – potential for feedback
 - ⊕ Headset for the PSP – no guarantee players will have one
- ⊕ Pre-defined messages: limited in scope

Nintendo prohibits communication with strangers

- ⊕ Only option is pre-defined messages
 - ⊕ Impossible to account for every situation

Affects game play

- ⊕ Level of communication affects players' ability to coordinate tasks and work together

Player Communication



⊕ Existing Design:

There was none?!

- ⊕ Consoles had voice chat, but no PSP API

⊕ Future Possibilities:

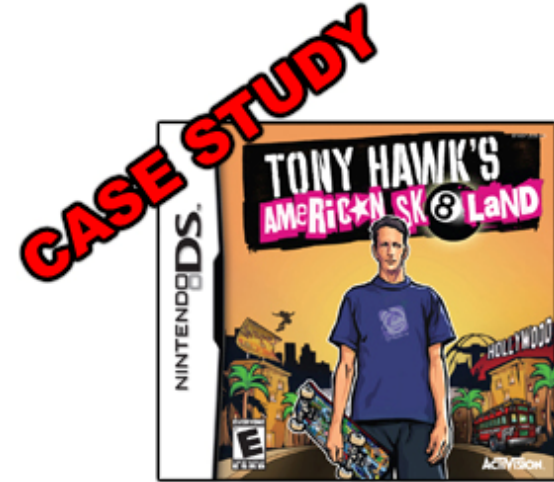
In-game voice chat

Lobby text chat

Pre-defined voice messages

- ⊕ "I need help!"

Player Communication



Existing Design:

System for issuing challenges to players

- Selecting new game modes, levels, etc

Future Possibilities:

Walkie-talkie mode voice chat when in game

Text chat when in the lobby

- Virtual keyboard on the touchscreen

Pre-defined messages

- Communication with people who are not on your friends list

Online Community

“Building culture, and connecting people of like minds.”

⊕ Areas of consideration

Extend the single player experience

- ⊕ Score boards, replays, downloadable features

Facilitate the multiplayer experience

- ⊕ Swapping friend keys for the DS
- ⊕ Sharing custom data

Increased space for saving custom content

- ⊕ Limited space to save content on DS cartridge
 - ⊕ Website acts as a giant file server for game data

Data sharing between console/PC

- ⊕ DS & Revolution, PSP & PS2/PS3

Online Community (continued)

Powerful marketing tool

- ⊕ Direct link to core audience
 - ⊕ Advertise upcoming titles
- ⊕ SK8land MOTD
- ⊕ Word of mouth – viral marketing
- ⊕ Useful for gathering statistics

Community

⊕ Existing Design:
Nothing. How bland.

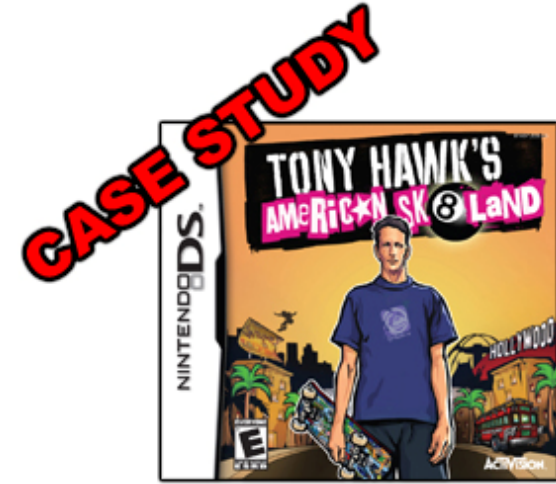
⊕ Future Possibilities:

Web site integration

- ⊕ Host player-created custom data (generated on the PC)
 - ⊕ Texture swapping
- ⊕ Ranking and player stats
- ⊕ Community unlockables



Community

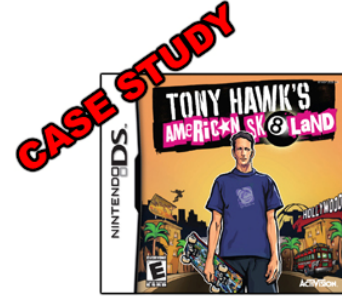


🌐 Existing Design:

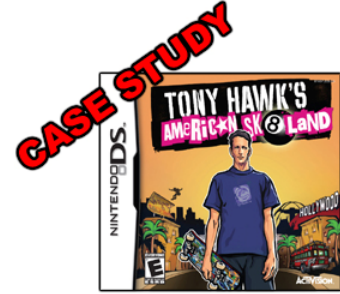
<http://www.american-sk8land.com>

Custom art sharing

Community (continued)



Community (continued)



WHAT'S NEXT

..... GDC:06

Community

⊕ Future Possibilities:

Augment data sharing

- ⊕ Custom shirt, pants, deck, logo
- ⊕ Allow players to view and rate artwork on the DS

Unique author ID

- ⊕ Prevent theft of artwork

Record head-to-head wins and losses

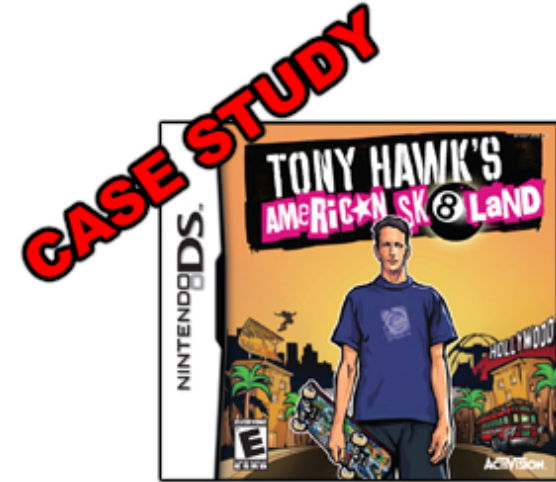
- ⊕ Online tournaments and ladders

Additional dynamic content

- ⊕ Weekly newsletter, SK8blog
- ⊕ RSS feed of top player data to be used on other websites

More in-depth player profiles

- ⊕ Avatars, percent of game completed, favorite tricks



Summary

Questions?