

Making Multiplayer iPhone Games

Theory and Practice

Presented by ByteClub

When it comes to iPhone games...

Stop playing with **yourself**

Start playing with **others**

It's more fun

Parts

- ❖ **What** is “multiplayer”?
- ❖ **Why** should you care?
- ❖ **Design** considerations
- ❖ **Implementation** notes
- ❖ ByteClub

Once upon a time,
BobSpades463 was
addicted to online poker

What is “multiplayer”?

- ❖ **Definition**

- ❖ More than one participant
- ❖ Players interacting...
 - ❖ with each other
 - ❖ with game-related objects

What is “multiplayer”?

- ❖ **How “multi” can it get?**
 - ❖ Same device
 - ❖ “*Grab on*” or “*Pass-to-play*”
 - ❖ Local Wi-Fi network
 - ❖ Internet

What is “multiplayer”?

- ❖ **Synchronous**

- Players in game at the same time
- More direct interactions

- ❖ **Asynchronous** (e.g. “ghost racing”)

- Time-shifted
- Indirect interactions

- ❖ **Hybrid** (e.g. MMOs)

Why should you care?

- ❖ **Now is a good time**
 - ❖ More connected world +
 - ❖ More powerful devices +
 - ❖ More entertainment consumed =
 - ❖ Convergence!

Why should you care?

- **It's natural**

- Being human = Being social
- Competition and collaboration instincts
- Facebook, Twitter leading the way

Why should you care?

- **Must-have feature, sometimes**
 - Tic-Tac-Toe against a computer?!
 - But, chess...
- **It's about “fun”**
 - Single-player with a touch of “multi”

Why should you care?

- **More value to players**
 - Replay-ability
 - More engaging
- **More value to developer**
 - Stand out from the crowd
 - Viral qualities/publicity

Design considerations

- **Time commitment**

- iPhone: ADD by design
- Portability is key
- Bite-sized gameplay on the go
- Wi-Fi = More time to play

Design considerations

- **Opponent availability problem**
 - Increase user base
 - Use network effect
 - More platforms
 - Keep ‘em busy

Design considerations

- **Accessibility**

- More features = More friction
- KISS

- **Game interruptions**

- Phone ringing?
- Don't feel like losing?

Design considerations

- **Face-to-face vs online**
 - Let them communicate
 - Help them communicate
- **Local Wi-Fi vs online**
 - Network speed
 - Finding opponents

Design considerations

- ❖ **Server vs. No server**
 - ❖ Connectivity
 - ❖ Game state
 - ❖ Crash handling
 - ❖ Security vs. obscurity

Design considerations

- **Levels of (asynch) interaction**
 - High scores
 - Challenges
 - “Ghost racing”
 - Conspicuously absent...

Implementation notes

- **Connectivity**

- Persistent connections
- Non-persistent connections
- Latency = Lag = Bad
- EDGE and 3G = Latency

Implementation notes

- **Marshaling data**

- Text (XML, JSON etc)
 - Easy to debug/Cross-platform
 - Bulky
- Binary
 - Reverse of the above

Implementation notes

- **Security**

- More honey = More bears
- Servers
- Communication
- Databases

Implementation notes

- **Scalability and Stability**

- Congrats, your app is popular!
- Oops, here comes the crowd!
- Redundancy = Good = Good
- Extensible data storage
- Parallel message processing

Implementation notes

- **Operations**

- Server + Clients = Family
 - “No app left behind”
- Monitor this!
- Down for maintenance
 - Notify users, pick non-peak time

Implementation notes

- **Hosting**

- In your basement
- Rack space
- Shared/dedicated servers
- Cloud

Implementation notes

- **iPhone SDK networking**
 - C vs Objective-C
 - Sockets and streams
 - HTTP and FTP
 - DNS (CFHost)
 - Bonjour (CFNetServices)

ByteClub

- **Scramboni**
 - 50,000 players
 - It's fun, but...
- **Multiplayer Gaming Platform**
 - Same back-end
 - Available to other developers

Thank you!

<http://byteclub.com>