

A Long-term Study of a Popular MMORPG

Wu-chang Feng



Debanjan Saha



David Brandt



Imagine yourself

- In charge of running a successful MMORPG
- Your goal
 - Make money
 - 100k+ people paying you \$20 a month to play

Questions

- How many players will there be next week?
 - Provision servers to support them
- What can I do to increase this number?
 - Impact of game updates and promotions
- What can I do to make sure players don't quit?
 - Detecting disinterested players

Difficult questions to answer

- Requires player data from a successful MMORPGs over a long time period (fat chance!)
- Never hurts to ask...
 - Remember NetGames 2004?
 - David Brandt, CCP Games



The screenshot shows the CCP Games website with a dark grey background. At the top left is the CCP logo, consisting of a cluster of white dots. A navigation bar at the top contains links: HOME, COMPANY, PRODUCTS, JOBS, and PUBLIC RELATIONS. The main content area features a large, semi-transparent 'PRESS' watermark on the left. The headline 'NETGAMES 2005' is centered. Below it is a graphic for 'NETGAMES hosted by IBM', which includes the IBM logo and a stylized network diagram. To the right of the graphic, the text reads: 'CCP will be pleased to meet you at this year's NetGames 2005, October 10.-11.' followed by 'CCP will be attending and speaking on the Panel Session: Research in Online Games: An Industry Perspective'. Below this, a paragraph states: 'The NetGames workshop brings together researchers and developers from academia and industry to share ideas and present new research in understanding networked games and in enabling the next generation of online games. This year's workshop will be hosted by IBM Research in Hawthorne, NY..'. At the bottom, it says 'Attending from CCP is David Brandt, Senior Server Engineer.' and 'To arrange meetings with CCP at NetGames 2005 please contact info@ccpgames.com'.

W. Feng, "A Long-term Study of a Popular MMORPG", NetGames 2007, Sept. 19-20, 2007.

EVE Online

➤ Single world sci-fi MMORPG



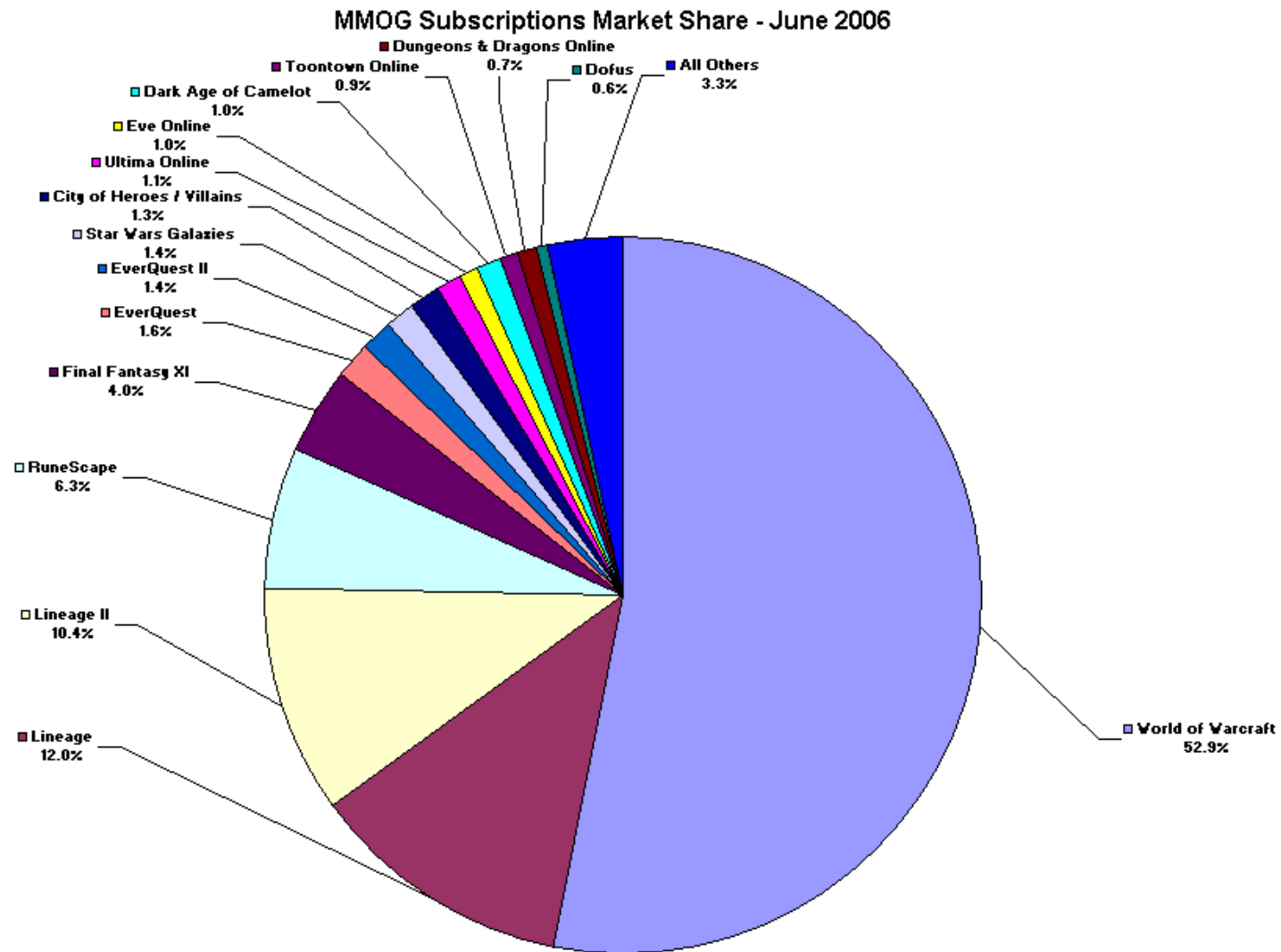
W. Feng, "A Long-term Study of a Popular MMORPG", NetGames 2007, Sept. 19-20, 2007.

EVE Online statistics

- Launched in UK and USA on May 6, 2003
 - Europe on May 23, 2003
 - China on June 12, 2006
- As of August 3, 2007
 - 190,000 active subscriptions
 - 35,000+ peak concurrent on-line players
- How does it stack up against other MMOs?

Not too shabby

➤ Source: <http://mmogchart.com> (6/2006)



W. Feng, "A Long-term Study of a Popular MMORPG", NetGames 2007, Sept. 19-20, 2007.

EVE Online trace

- Anonymized authentication log of EVE Online throughout its existence
 - All session-related events for each player

Duration	May 6, 2003 – March 12, 2006
Total sessions	67,060,901
Total unique players	925,928
Total player time	17,204 years

Questions

- How many players will there be next week?
 - Provision servers to support them
- What can I do to increase this number?
 - Impact of game updates and promotions
- What can I do to make sure players don't quit?
 - Detecting disinterested players

Previous study

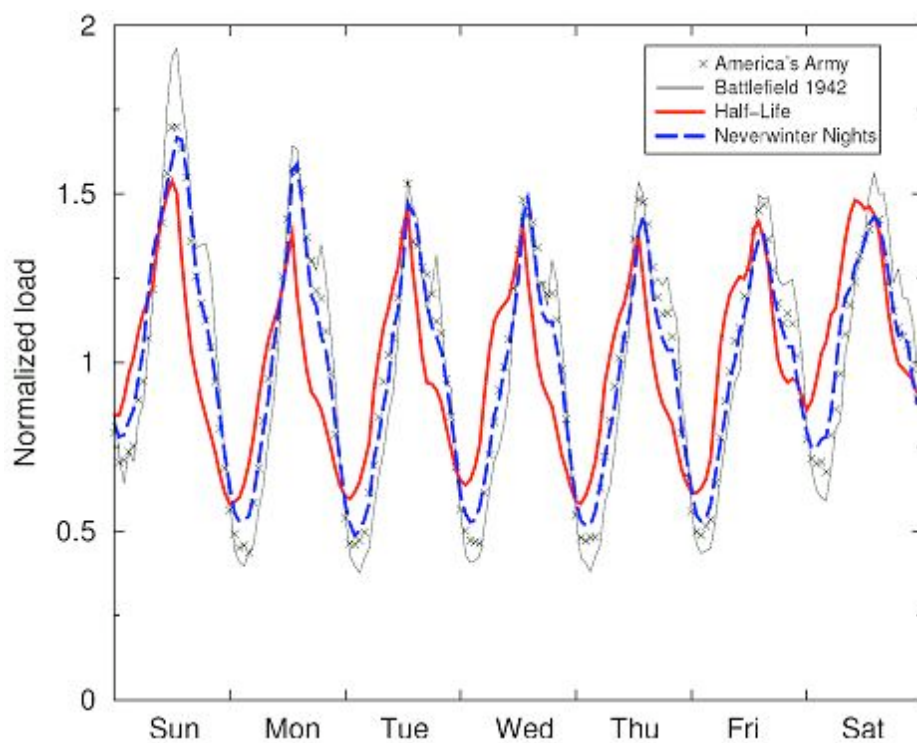
- Gamespy
 - 550 games (mostly FPS)
 - Nov 2002-Jan 2005
 - 337.8k player years

C. Chambers, W. Feng, D. Saha, S. Sahu, "Traffic Characterization of a Collection of On-line Games", IMC 2005 (Best student paper)

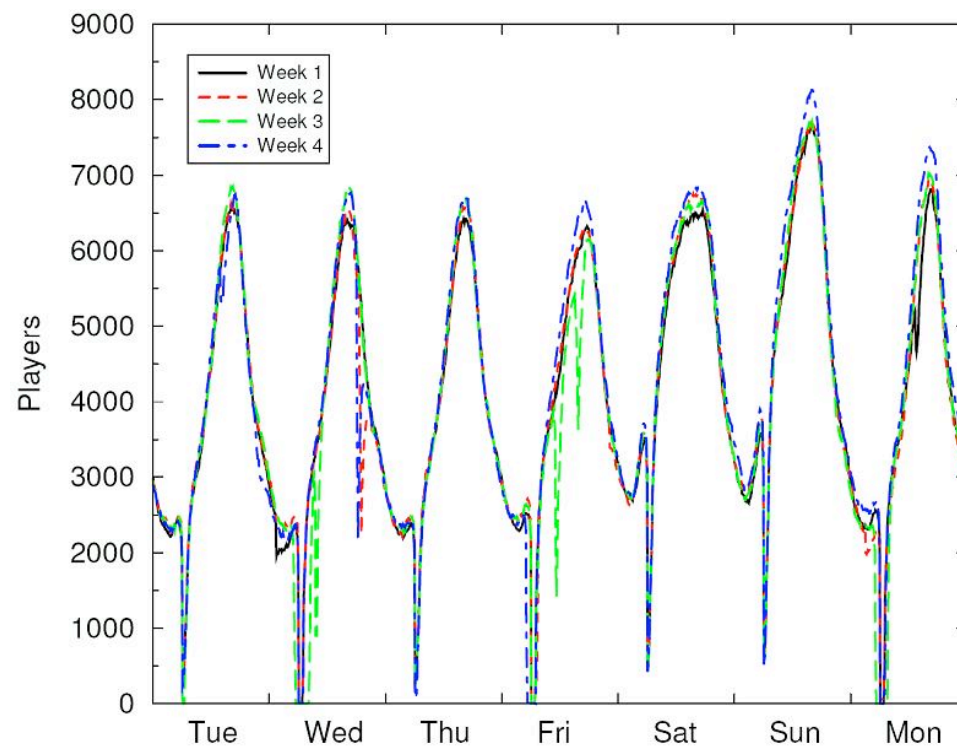
Game workloads

➤ Periodic

- Strong daily peaks with weaker weekend peaks



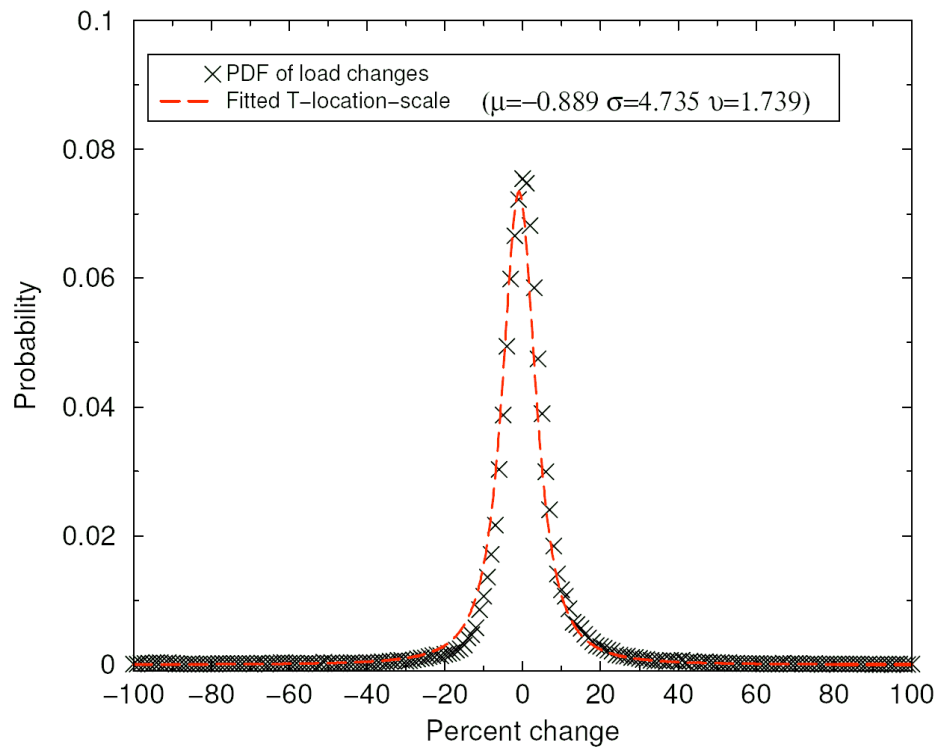
Gamespy



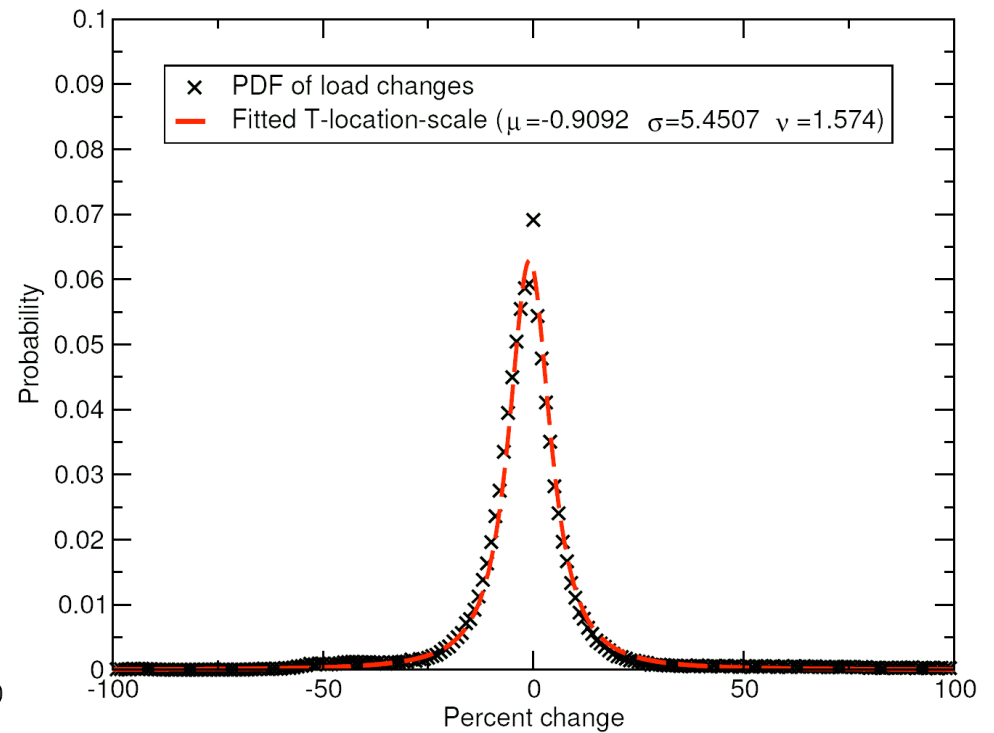
EVE Online

Game workloads

- Predictable over short-term
 - Workload fluctuations small from week-to-week



Gamespy



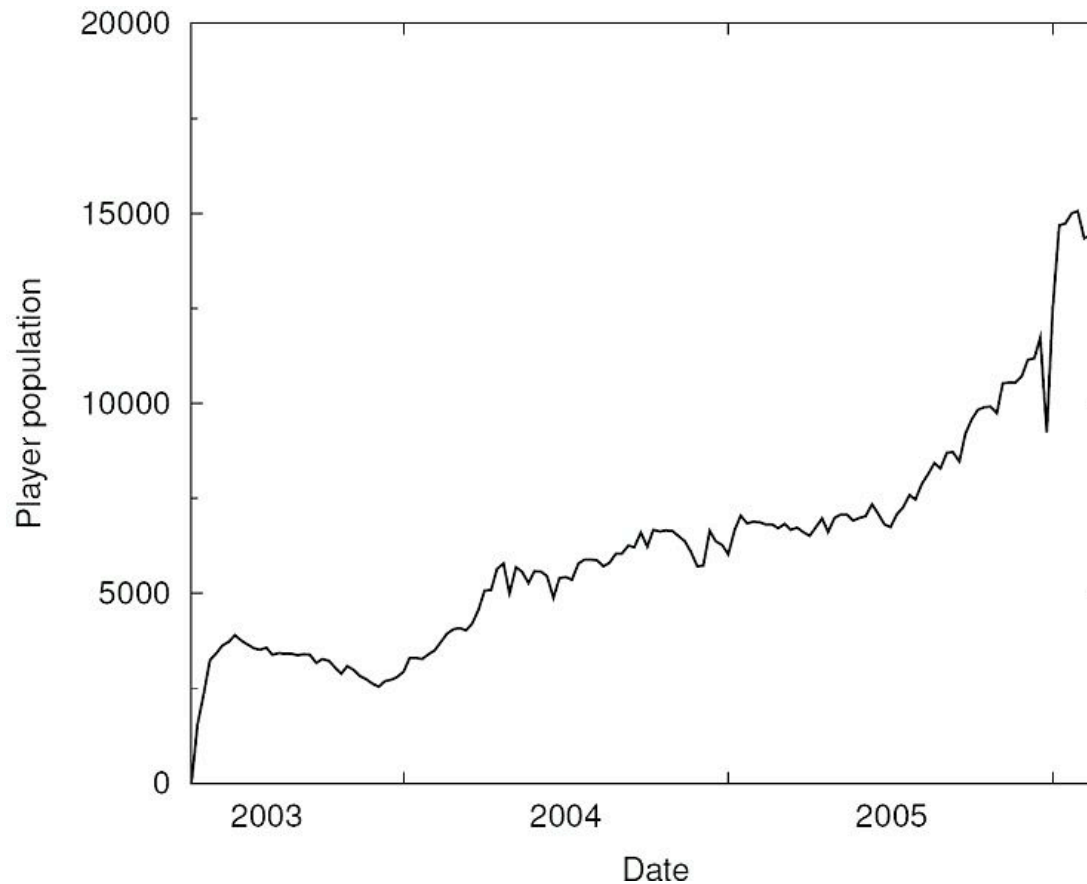
EVE Online

Questions

- How many players will there be next week?
 - Provision servers to support them
- What can I do to increase this number?
 - Impact of game updates and promotions
- What can I do to make sure players don't quit?
 - Detecting disinterested players

EVE Online growth

- Active player population throughout trace



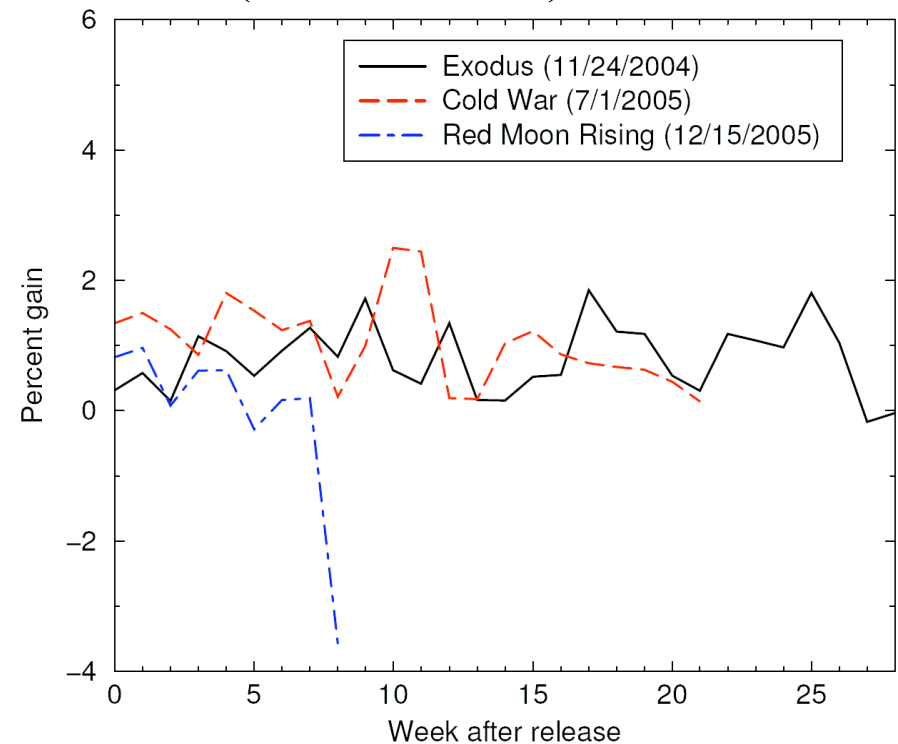
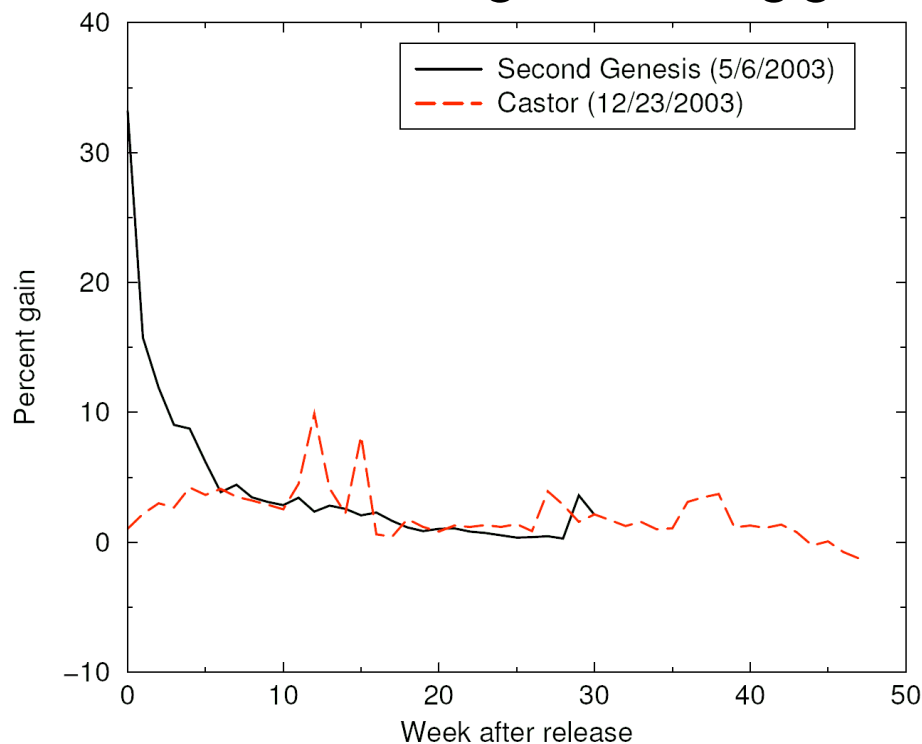
EVE Online

Mechanisms for increasing population

- New game content and updates
- Promotions and marketing
- Price reduction

Impact of game updates

- Gain in players after each game update in trace
 - Large gains after initial release
 - Modest gains after subsequent game updates
- Castor spikes
 - Competing sci-fi MMORPG shuttered
 - Marketing blitz during game conference (free accounts)



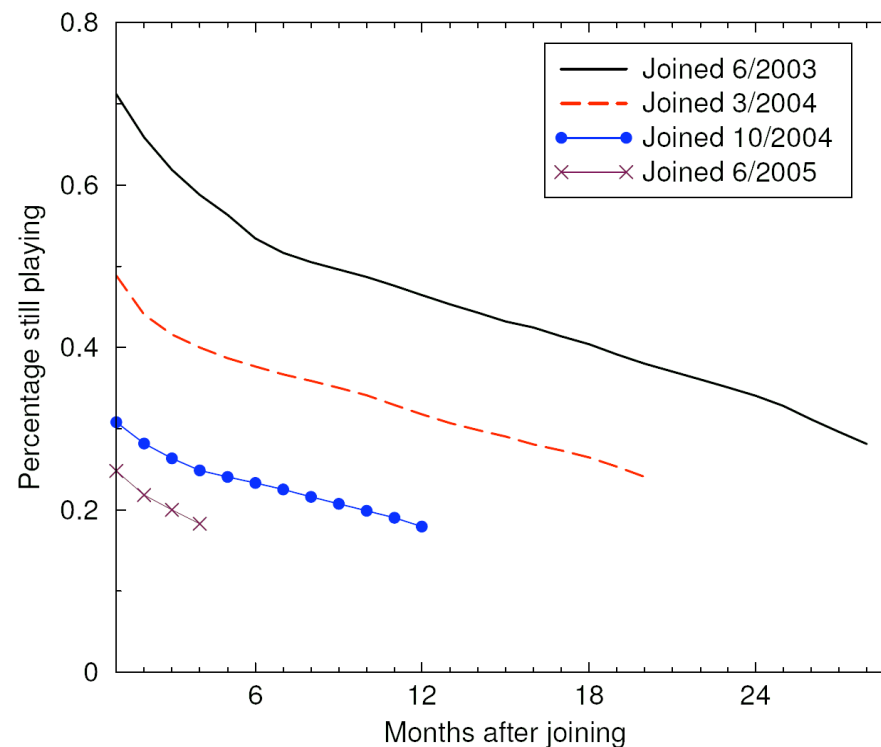
W. Feng, "A Long-term Study of a Popular MMORPG", NetGames 2007, Sept. 19-20, 2007.

Questions

- How many players will there be next week?
 - Provision servers to support them
- What can I do to increase this number?
 - Impact of game updates and promotions
- What can I do to make sure players don't quit?
 - Detecting disinterested players

Player churn

- A fact of MMORPG life
 - MMORPGs notorious for low acquisition rates
 - EVE Online player acquisition rate drops over time
- Potential reasons
 - New players at a disadvantage
 - Hard-core player population “tapped” out



W. Feng, "A Long-term Study of a Popular MMORPG", NetGames 2007, Sept. 19-20, 2007.

Acquiring new players is hard

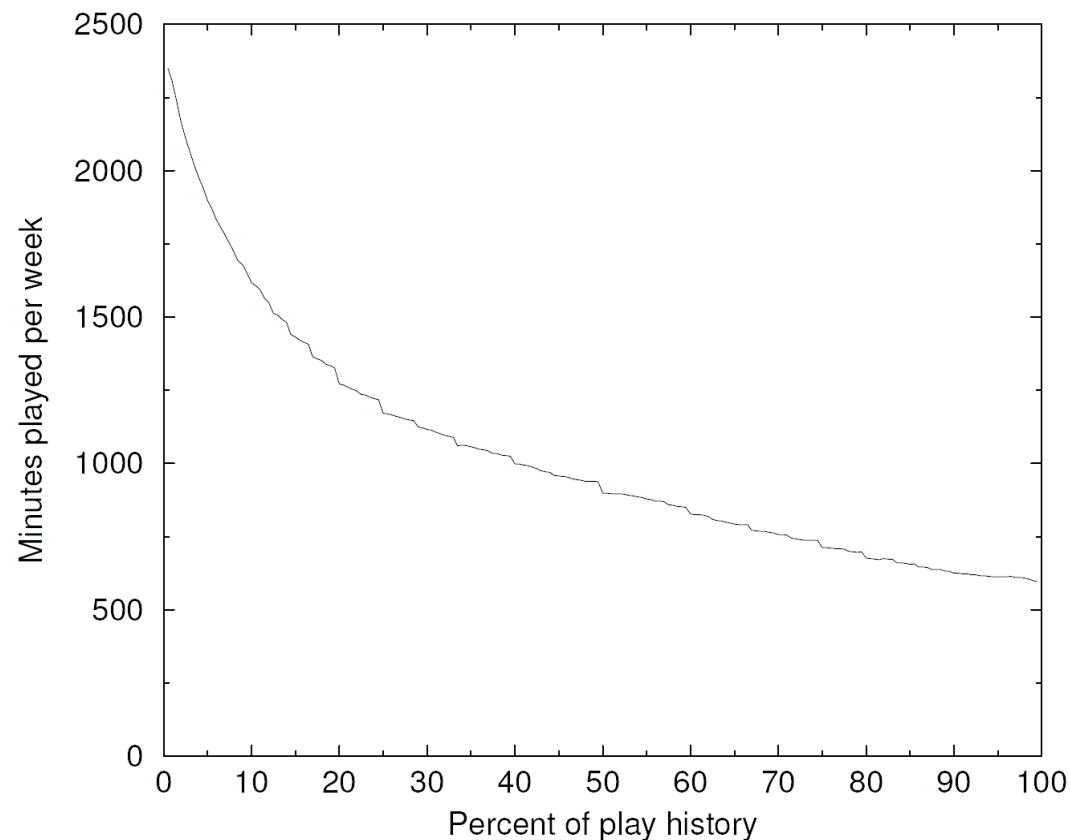
Let's keep the ones we have instead!

Can we measure disinterest?

- Examining play history to detect waning interest
 - Minutes played per week
 - Session length statistics
 - Inter-session time statistics

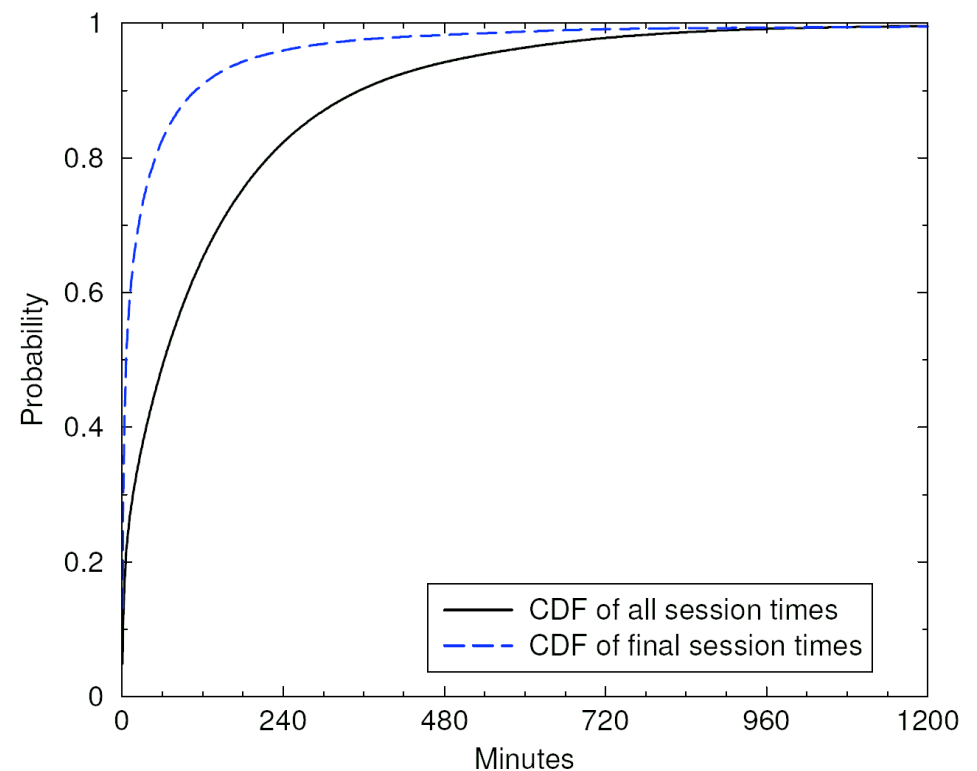
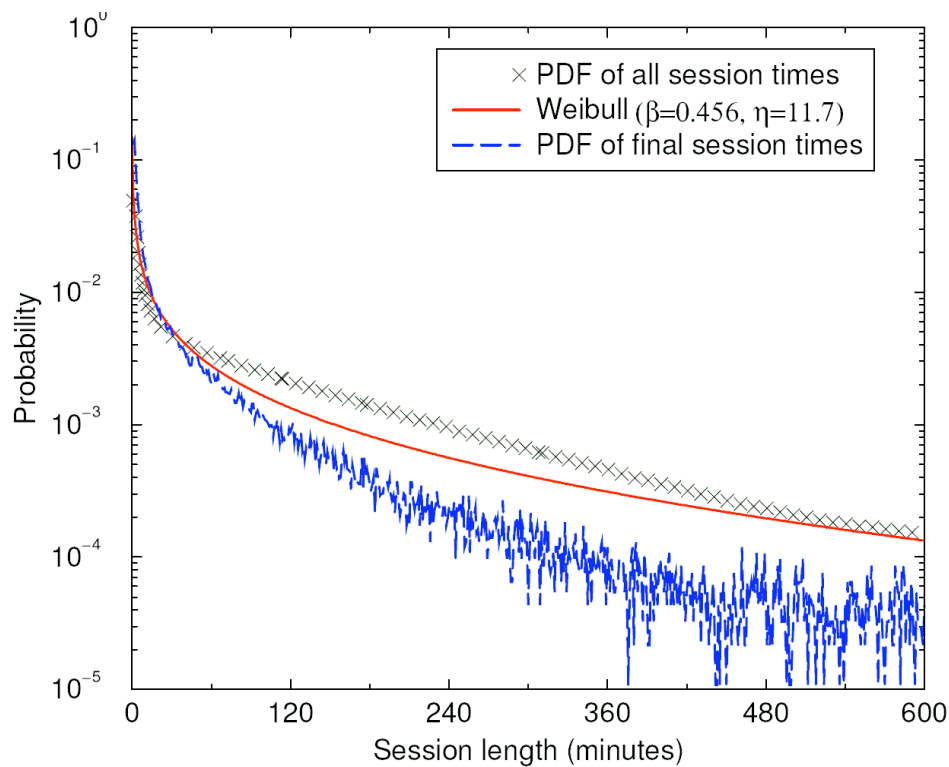
Metric #1: Minutes played per week

- Minutes played per week throughout play history
 - Players play less over time



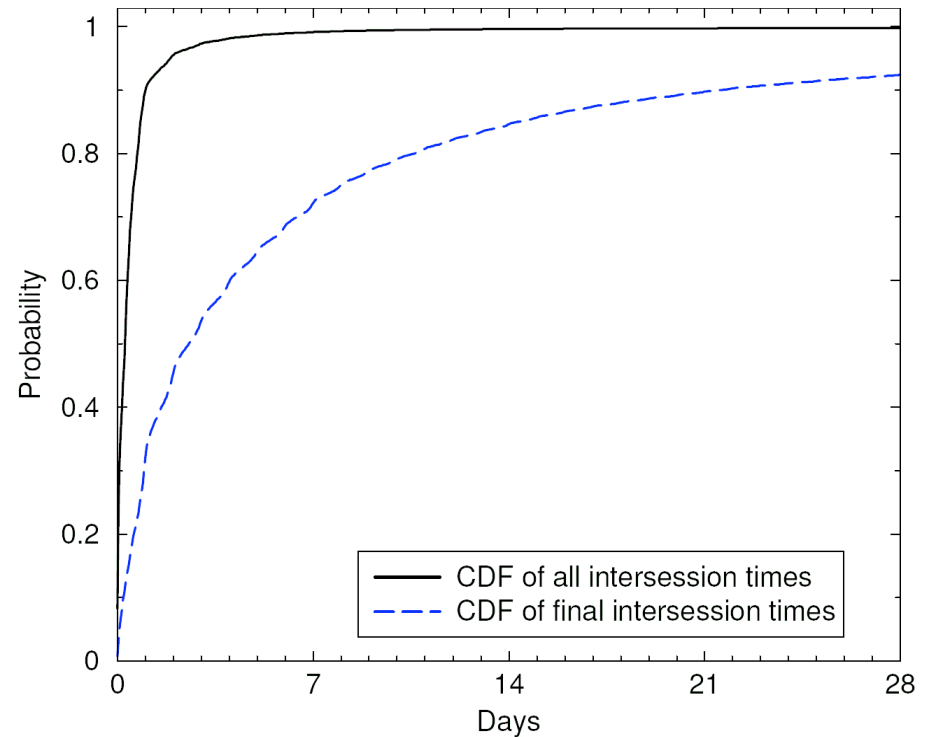
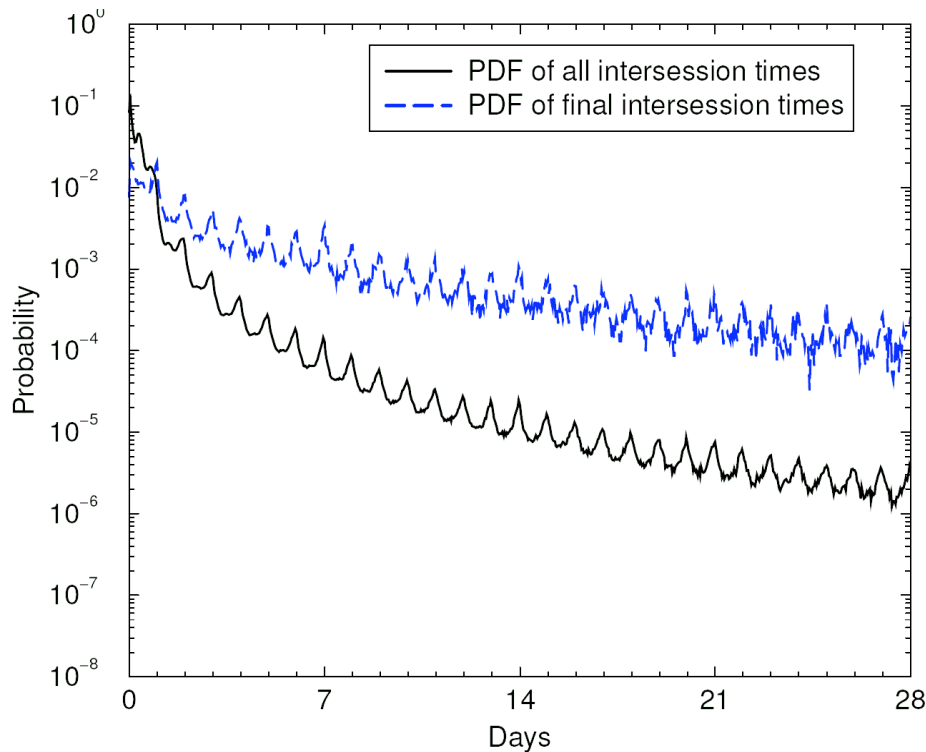
Metric #2: Session times

- Session time distribution
 - Session length of “final” session shorter than normal



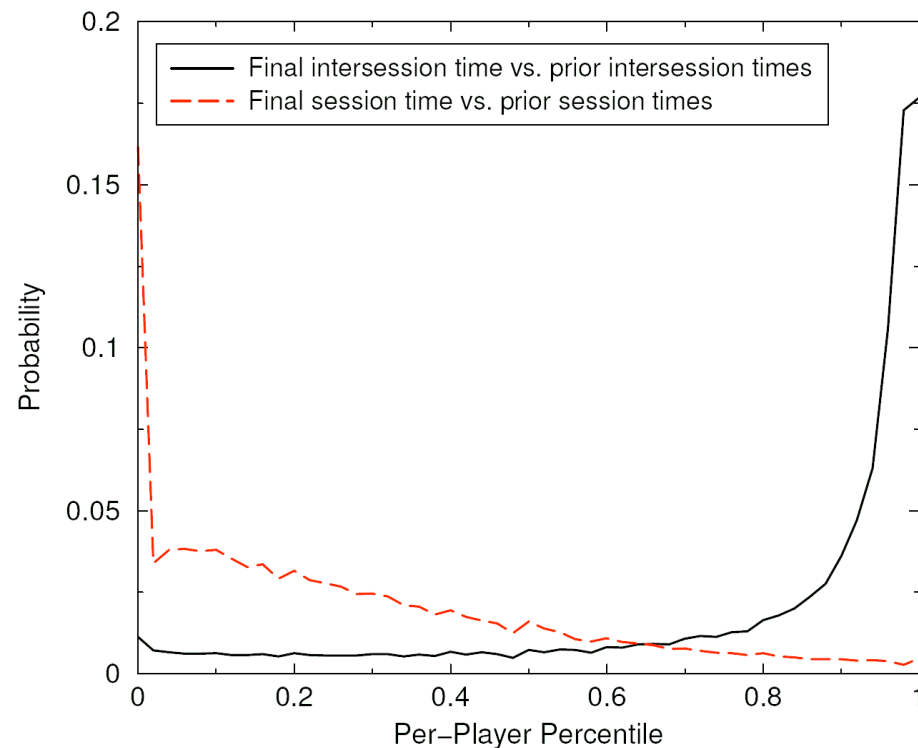
Metric #3: Intersession times

- Intersession time distribution
 - “Final” intersession time significantly longer than normal



Catching a disinterested player

- Aggregate not individual statistics
 - Addicts thrown in with casual gamers
 - Normalize per-player
- What percentile does final session and final inter-session times fall into versus player's prior times?
 - “Final” intersession time a very good predictor!



W. Feng, "A Long-term Study of a Popular MMORPG", NetGames 2007, Sept. 19-20, 2007.

Conclusion

- A close look at a popular MMORPG over a long period of time
- Key observations
 - Workload stability
 - Player acquisition and churn
 - Measuring disinterest

Questions?

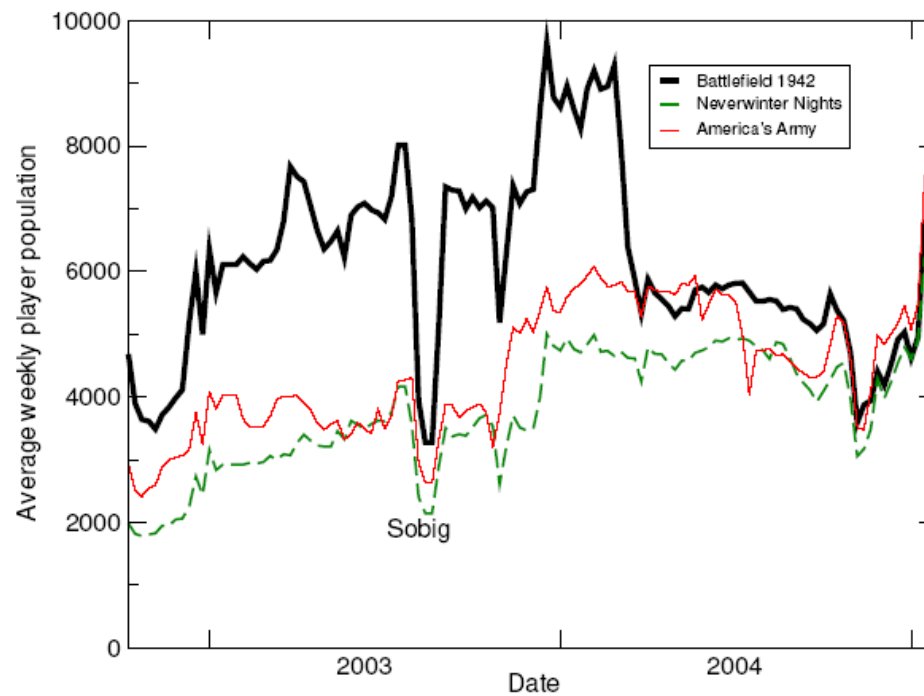


W. Feng, "A Long-term Study of a Popular MMORPG", NetGames 2007, Sept. 19-20, 2007.

Extra slides

Game workloads

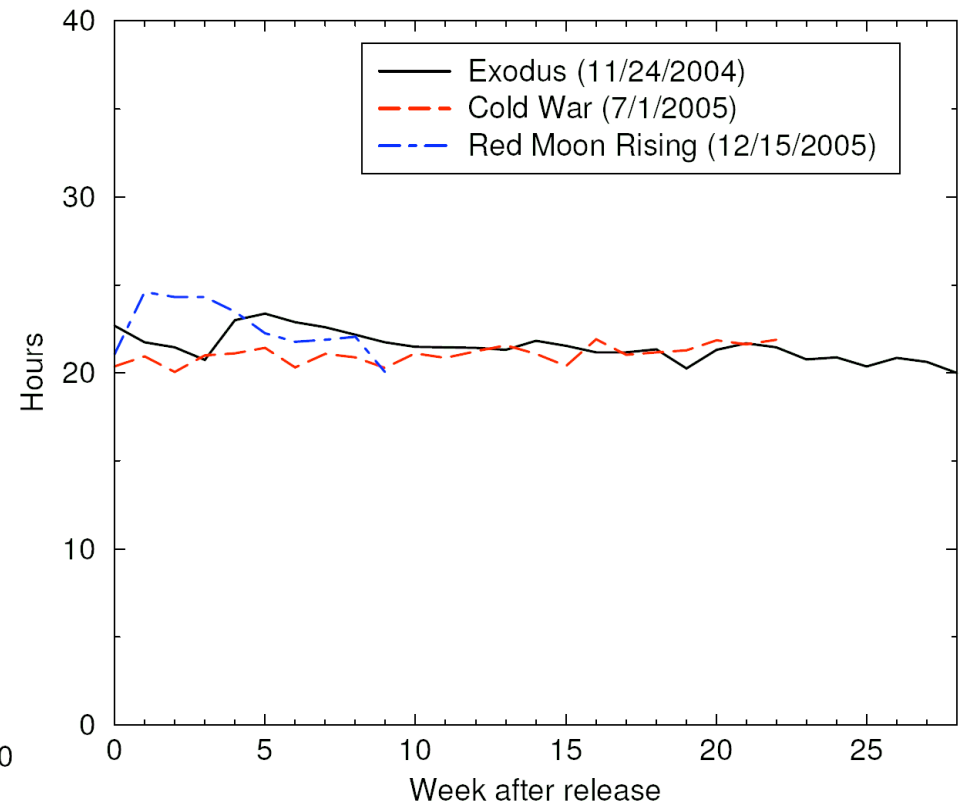
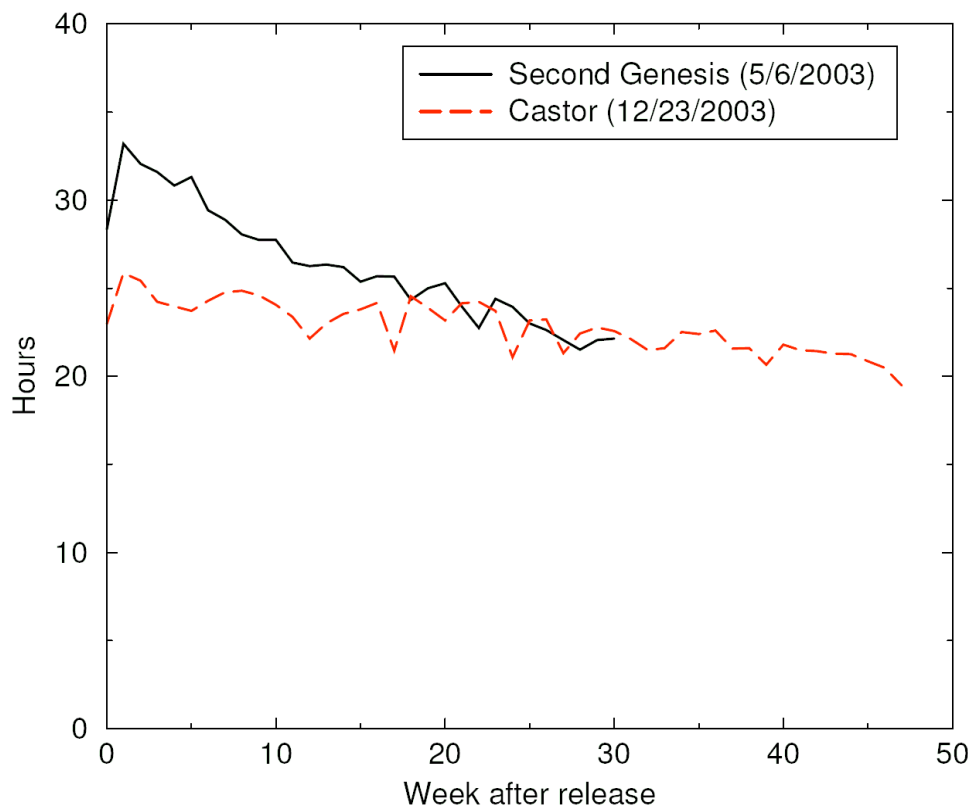
- Unpredictable over long-term



Gamespy

Impact of game updates

- Player minutes per week as a function of last game update



Player sessions

- Many play for a short time

