

A Study of China's Censorship and Its Evasion Through the Lens of Online Gaming

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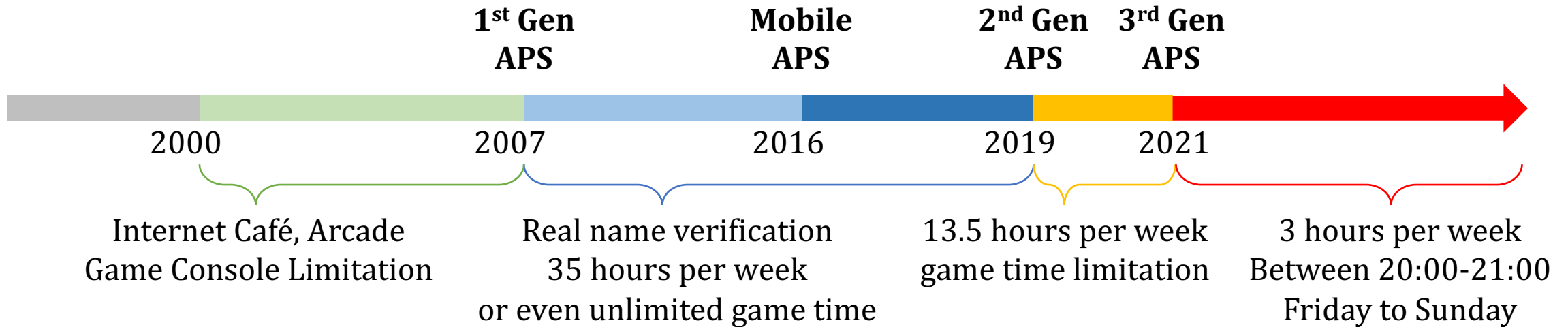
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Investigation of Censorship in China

- ❑ User experience with censorship in China
 - ❑ Great firewall (GFW)
- ❑ Survey of general censorship evasion
 - ❑ No responses
- ❑ Restricted minor access to online games
 - ❑ China has hundreds of millions of gamers
 - ❑ Many of which are minors
 - ❑ Restrictions are increasingly draconian
- ❑ Idea: Censorship through online gaming restrictions lens

Gaming Restrictions



- Restrictions are increasingly draconian
 - Real name verification
 - Temporal
 - In-game purchases

- Game licensing process

Internet Censorship vs. Gaming Restrictions

- Gaming restriction restricts gaming access
 - To vulnerable minors
- GFW restricts Internet
 - To users vulnerable to Western influence
- Research Questions
 - How do gamers evade gaming restrictions?
 - Does the GFW affect them?
 - Have they attempted to evade the GFW?
 - What challenges are they facing?

Methodology

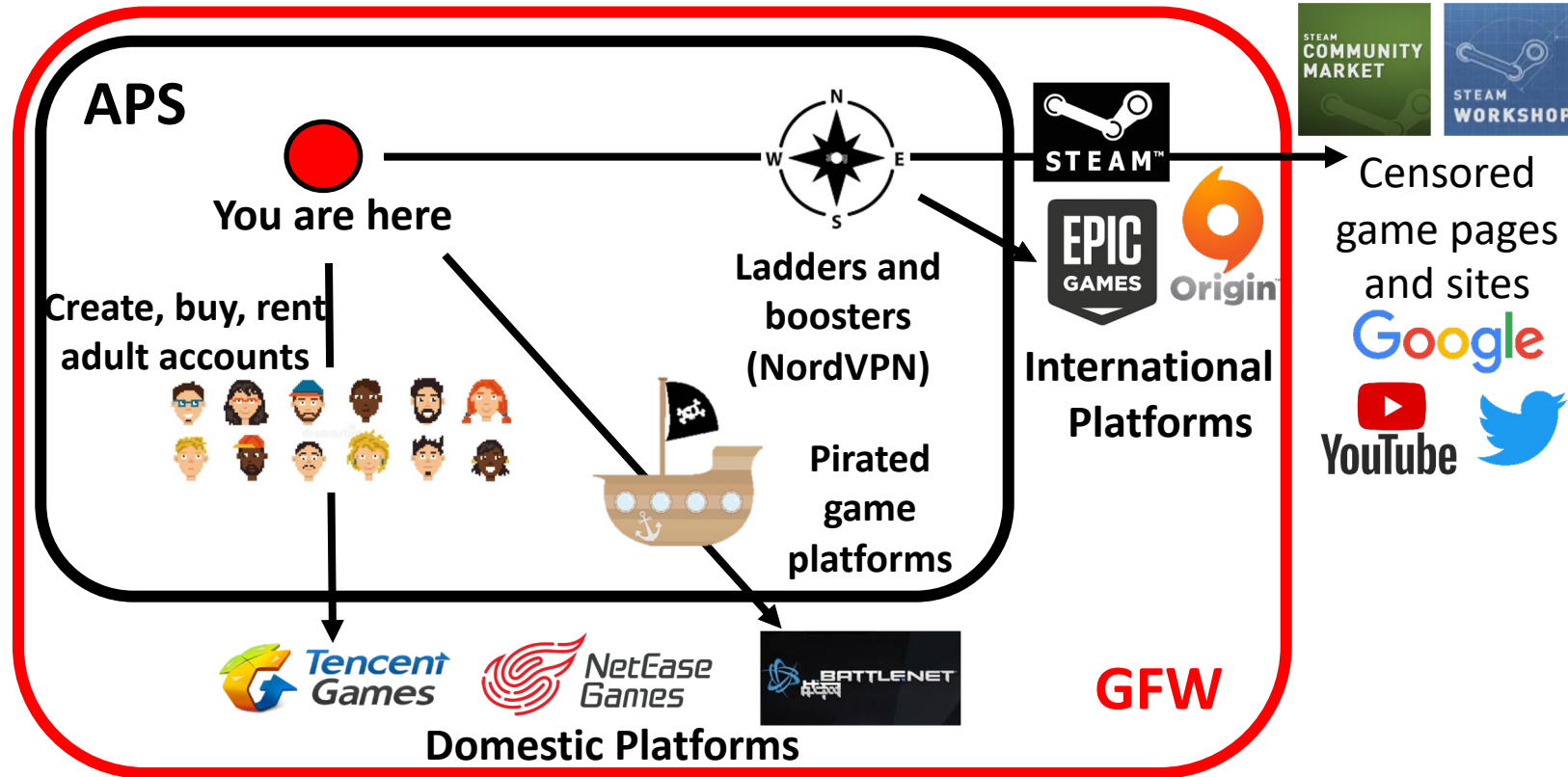
- ❑ Guided by young Chinese netizens
 - ❑ With educated backgrounds
- ❑ Quantitative study: survey with 2,415 participants
 - ❑ Who **played online games while minors**
 - ❑ Crowdsourcing site wenjuan.com
 - ❑ Bulletin boards on Chinese universities, technical colleges
 - ❑ Chat groups of Chinese online gamers
- ❑ Semi-structured interviews with 35 participants
 - ❑ Recruited among survey respondents
 - ❑ Evaded gaming restriction while minors

Survey Findings

| Questions | Total | Male | Female | Undeclared |
|-----------------------------------|------------|------------|------------|------------|
| Online Gamer when Minor | 2415 | 556 | 1534 | 325 |
| Affected by APS | 1786 | 425 | 1105 | 256 |
| Evaded APS | 674 | 202 | 374 | 98 |
| Played on international Platform | 361 | 191 | 64 | 106 |
| Used GFW Ladder or Booster | 279 | 201 | 78 | 0 |
| Understands Foreign Language | 336 | 150 | 67 | 99 |

- ❑ 37% of respondents affected by restrictions evaded them
 - ❑ Including 33% of female respondents
- ❑ 11.5% of respondents played international games
 - ❑ 77% used GFW evasion tools or game boosters

Interview Findings



Map of Gaming Restrictions Evasion

Acquiring Adult Accounts

Renting adult accounts

- Rental services on search engines and e-commerce sites

- 2-3 CNY (\$0.5) per hour

“Most game platforms don’t apply strict IP or location checks” (P216)

Borrowing adult accounts

*“When one of my friends was not playing the game, I would type in their account name and password, then they would **forward the 2FA code from their phone**” (P9)*

Purchasing adult accounts

Creating Adult Accounts: Adult IDs

❑ Generated (Fake) IDs: avoid providing real IDs

“I could create an account by looking for some ID number generators on the Internet” (P262)

❑ **No longer works**

❑ Purchased (Genuine) IDs

❑ Sold online by their owners (voluntarily or forcibly)

“I can search for ID information online to create a gaming account, but links [to sites selling IDs] disappear later” (P68)

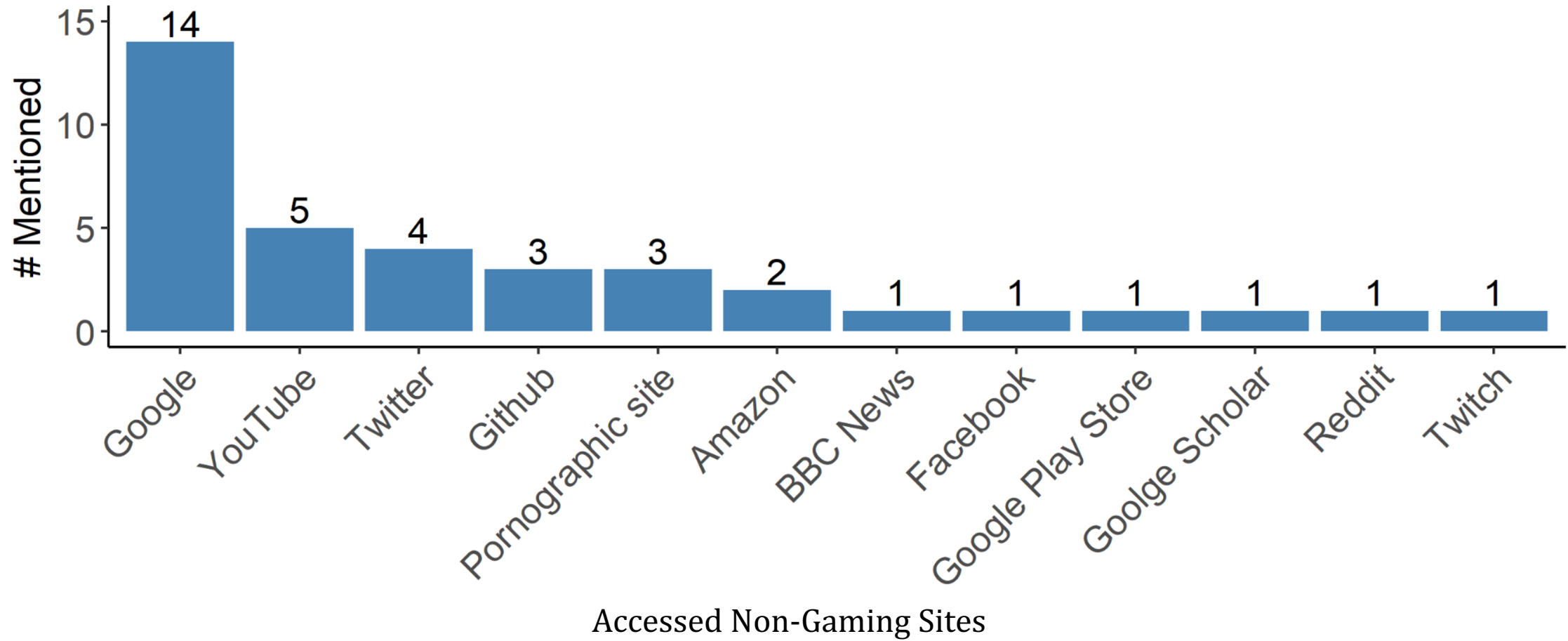
❑ Family IDs

“I used my parents’ ID cards secretly, and later I used my adult friends’ ID cards, who never registered for the same game” (P155)

Experience with the Great Firewall (GFW)

- ❑ All interview participants aware of GFW
 - ❑ Twenty-two affected by the GFW
- ❑ Fourteen participated evaded the GFW
 - ❑ Willing to discuss
- ❑ Terminology:
 - ❑ Climb over the wall(翻墙): Evading GFW
 - ❑ Ladder(梯子): GFW Evasion Tools

Reasons to Evade GFW



Reasons to Evade GFW (cont'd)

“Some people think censorship is mind control. I don’t buy it, so I evade the GFW to verify information from both sides. I can check if different parties are reporting the truth” (P110)

GFW Ladder Discovery

1. Online search for any ladder (not trusted)

“I use homonyms or special terms to search for the ladder” (P1599)

2. Use untrusted ladder to get a trusted ladder

“I found tutorials in Baidu Tieba. After evading the GFW, I saw other solutions promoted on YouTube videos. The videos will have VPN advertisements, and YouTubers will also promote that a particular VPN is efficient” (P155)

GFW Ladder Concerns: Reliability

- ❑ Most participants report ladder unreliability

*“There are many VPNs that are very unstable once you pay for them”
(P95)*

- ❑ Simultaneous failures

“When one VPN goes down, others will not work either. But after a while, they start working again” (P87)

GFW Ladder Concerns: Privacy

❑ Exposure concerns

“I worried that the GFW ladder stores my IP information” (P262)

❑ Official evasion channels

“I would not watch porn via this channel, since access is definitely monitored” (P9)

❑ Participants revealed 18 GFW ladders

- ❑ 16 require users to register accounts

- ❑ Including some of the free ones

Trust in GFW Ladders

- ❑ Pay for ladders unlikely to collude with GFW
 - ❑ Download ladders after first evading GFW

“VPN providers prefer to earn money from their tools, and try to provide more secure services, rather than hack me” (P110)

- ❑ Trust based on good communication

“Some VPNs will send a pop up to notify me to stop browsing specific websites when the traffic is under inspection” (P110)

GFW Ladders vs. Game Boosters

- ❑ 17 participants evade the GFW to play and watch games
- ❑ Use the same tool to evade GFW and boost games

“The VPN I used allowed me to play games and visit banned sites” (P155)

- ❑ “VPN” used to denote any ladders
- ❑ Confusion of gaming accelerators and GFW evasion
 - ❑ Popular VPNs advertise game boosting
 - ❑ Some boosters (Steam++) partially evade GFW

Conclusions

- ❑ Investigated experience of gaming restriction and censorship evasion among online gamers in China
 - ❑ Conducted surveys with 2,415 gamers from China
 - ❑ Interviews with 35 respondents

- ❑ Desensitization of Evasion Hypothesis
 - The need to evade gaming restrictions may desensitize young Chinese gamers to the fear that evading the GFW may violate the law
 - ❑ Seamless switch from gaming to Internet browsing
 - ❑ Encourage exploration of GFW-censored sites

Recommendations for CRSes Developers

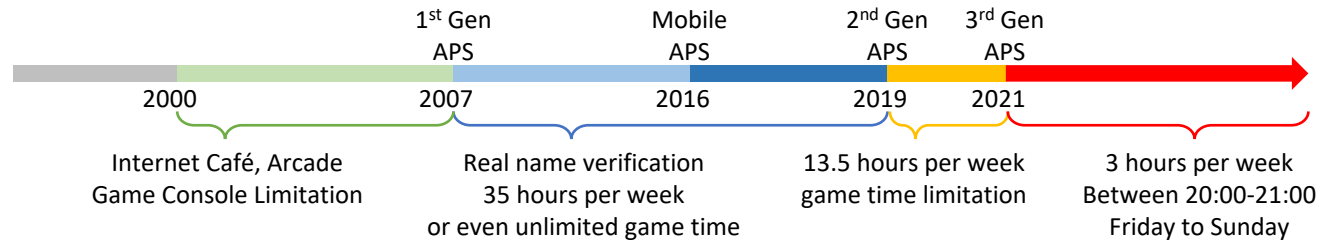
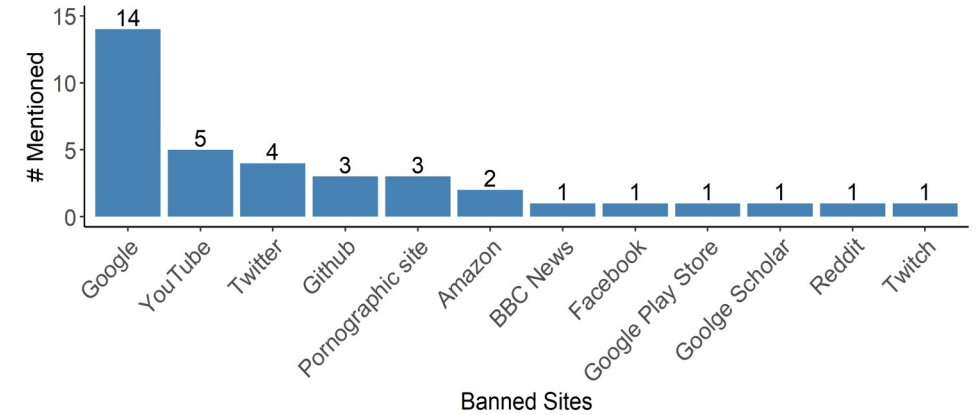
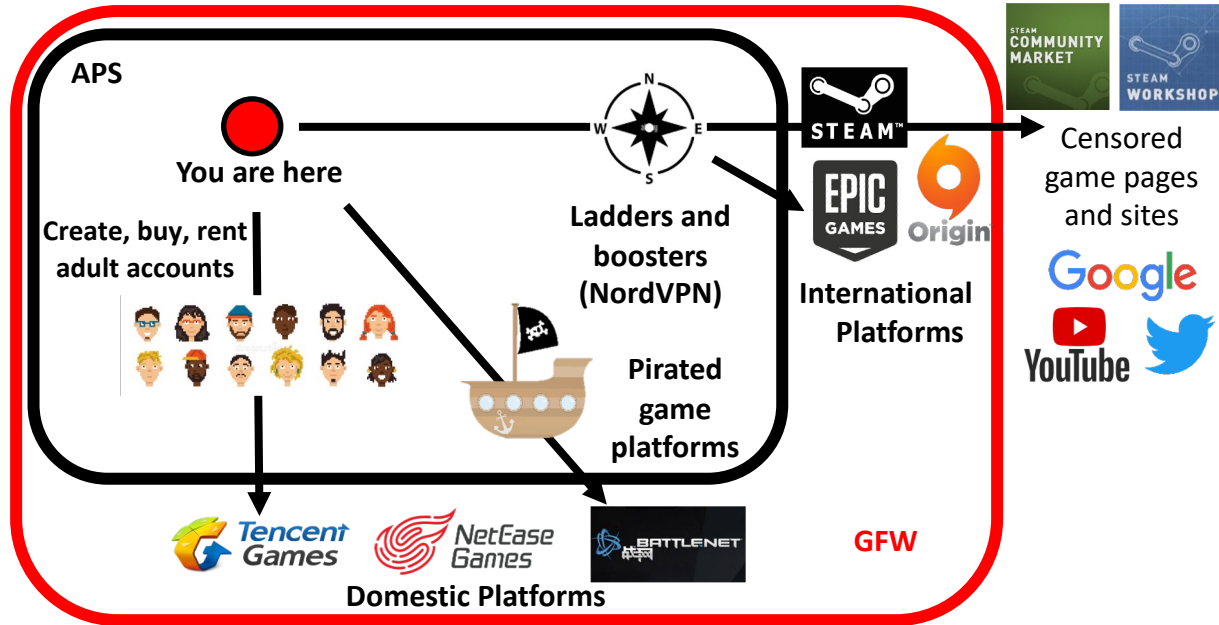
- ❑ Market CRSes as game boosters
 - ❑ Increase adoption among young Chinese netizens
 - ❑ Plausible deniability of GFW evasion
 - ❑ Plausibly deniable presence of evasion-enabling software

- ❑ Popular GFW ladders attract censor attention
 - ❑ Often leads to banning efforts

- ❑ Provision popularity-limiting mechanisms
 - ❑ Rebranding
 - ❑ Capping active accounts

Questions

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Thank you!