

# Loot box prevalence and video game companies' interpretations of loot box probability disclosure regulations in the People's Republic of China

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# Conflict of Interests Statement

- LYX was employed by LiveMe, a subsidiary of Cheetah Mobile (NYSE:CMCM) as an in-house counsel intern from July to August 2019 in Beijing, People's Republic of China. LYX was not involved with the monetisation of video games by Cheetah Mobile or its subsidiaries. LYX communicated with Playrix, the developer and publisher of sample games 48 (Gardenscapes) and 73 (Homescapes), in a legal capacity unrelated to either game's monetisation, including the absence of the implementation of loot boxes in either game, during his internship at LiveMe, a subsidiary of Cheetah Mobile (NYSE:CMCM).



# What is a loot box?

- ❖ Virtual items in video games that contain **randomised** rewards.
- ❖ Some loot boxes are **purchased with money**: our research focuses on paid loot boxes.
- ❖ Some loot box rewards can be sold to other players for real world money and therefore have **real world monetary value**.





# What can loot box rewards do?

- ✦ Some rewards are only **cosmetic**, e.g., they merely change the colour of the player character's sword.
- ✦ Other rewards may influence the game more significantly, e.g.:
  - ✦ unlocking **additional game content** not otherwise available;
  - ✦ granting **competitive advantages**.





# Total Spending

- ✦ No conclusive data as **the video game industry does not release data.**
- ✦ Loot box-related spending has been estimated to rise from under **US\$30 billion (≈£23 billion)** in 2018 to **US\$50 billion (≈£38 billion)** in 2022 (Juniper Research, 2018).



# Extreme Individual Cases Reported

- One UK player 'spent nearly **£700** in **a month**' (BBC, 2019)
- Another spent over '**[US]\$10,000** [**≈£7700**] in just **two years**' (Eurogamer, 2018)
- Four children spent 'nearly **£550** in **three weeks**' of their father's money without permission and still failed to obtain the rare item they were hoping for (BBC, 2019).



# *Potential Harms of Loot Boxes*

- ✦ Structural **similarity** between loot boxes and gambling
- ✦ Empirical link between **problem gambling** and loot box spending
  - ✦ 'The more severe that participants' problem gambling was, the more money they spent on loot boxes' (Zendle & Cairns, 2018).



# Prior Research on Prevalence

- Loot boxes are **prevalent** in all genres of video games on all platforms (PC, console and mobile):
  - **46.2%** of video game players reported purchasing loot boxes (Macey & Hamari, 2019).
- Vulnerable groups, such as **children**, are also exposed to loot boxes.
  - **28.1%** of 11–16-year-olds in the UK have used in-game items and **22.9%** have paid money to open loot boxes (UK Gambling Commission, 2019).



# Why this research?

- ✦ Loot box prevalence in **non-'Western'** countries is not known.
- ✦ The **effectiveness** of loot box **regulation** is not known.
- ✦ The People's Republic of China is the **only country in the world** to regulate loot boxes using a consumer protection measure.
- ✦ China requires video game companies to **disclose the probabilities** of obtaining randomised rewards.



# Probability Disclosures



### Appearance Rates

#### High-End Spotlight

|  |                 |         |
|--|-----------------|---------|
|  | Mario (Happi)   | 1.0000% |
|  | Quickshaw       | 1.0000% |
|  | New Year's Kite | 1.0000% |

#### High-End

|  |                |         |
|--|----------------|---------|
|  | Pauline        | 0.2500% |
|  | Mario (Hakama) | 0.2500% |
|  | Peach (Kimono) | 0.2500% |



# Why this research?

- Similar probability disclosure regulations are imposed in relation to gambling in other countries, including the UK.
- Companies in other industries have not disclosed information in effective ways that **improve and inform consumer choice**.
- Instead, companies in other industries have disclosed information in ineffective ways that **inhibit consumer choice**.



# Prevalence & Accessibility to Children

- **91.0%** of the 100 top-grossing iPhone games contained loot boxes.
  - Significantly higher ( $P < .001$ ) than **59%** found in the UK.
- 57 of the 63 games (**90.5%**) deemed suitable for children aged 12+ contained loot boxes.
  - Significantly higher ( $P < .001$ ) than the **58.9%** of 95 games found in the UK.

| Apple App Store Age Rating | Total number of games (cumulative) | Number of games that contain loot boxes (cumulative) | Percentage containing loot boxes |
|----------------------------|------------------------------------|--|----------------------------------|
| 4+                         | 12                                 | 8  | 66.7%                            |
| 9+                         | 37                                 | 31   | 83.8%                            |
| 12+                        | 63                                 | 57   | 90.5%                            |
| 17+                        | 100                                | 91   | 91.0%                            |

Table 1: Apple App Store Age Rating of Games Containing Loot Boxes (Cumulative)



# Did games disclose probabilities? Where were they disclosed?

- 4% of the 100 top-grossing iPhone games did not disclose probabilities.
- Chinese law allows a wide **discretion** to companies and recognises disclosure as compliant if made:
  - (a) in-game on the loot boxes' purchasing screen;
  - (b) on the game's official website; **or**
  - (c) at both locations.
- **65.9%** of games containing loot boxes did not disclose at both locations even though this would reasonably be the best method; therefore, game companies **failed** to maximise consumer protection.

| Location of disclosure       | Number of games |
|------------------------------|-----------------|
| In-game only                 | 21 (23.1%)      |
| On the official website only | 35 (38.5%)      |
| Both locations               | 31 (34.1%)      |
| No disclosure found          | 4 (4.4%)        |

*Note: Total sample size = 91 games.*

**Table 2: Locations of Found Disclosures**



# Accessibility: In-Game

| Number of games | Summary of disclosure type   |
|-----------------|--|
| 29 (55.8%)      | Immediately after tapping a small generic symbol, e.g., a ? mark; a ! mark or an i mark                        |
| 8 (15.4%)       | After tapping a small generic symbol and following additional steps  |
| 6 (11.5%)       | Immediately after tapping a small button explicitly referencing 'probabilities'                                |
| 5 (9.6%)        | Automatically displayed on the loot box purchase screen without requiring any additional input from the player |
| 3 (5.8%)        | After tapping a graphic element which was not seemingly interactable   |
| 1 (1.9%)        | After interacting with the in-game customer support system and chatting with a bot                             |

*Note:* Total sample size = 52 games.

**Table 3: Sub-categories of found in-game disclosures**



# Automatically displayed (9.6%)





# Tapping a small generic symbol referencing 'probabilities' (11.5%)





# Tapping a small generic symbol (55.8%)



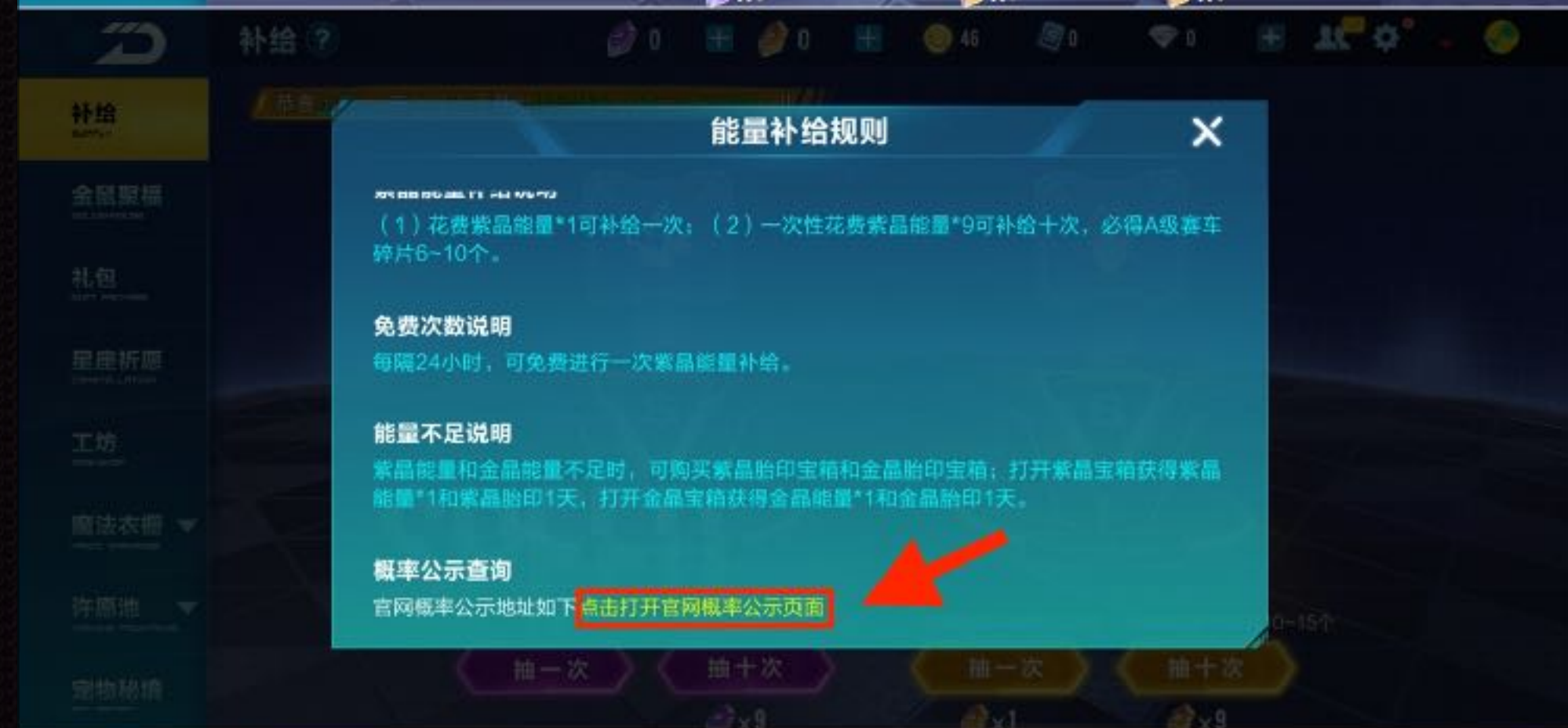


# Tapping a small generic symbol (55.8%)





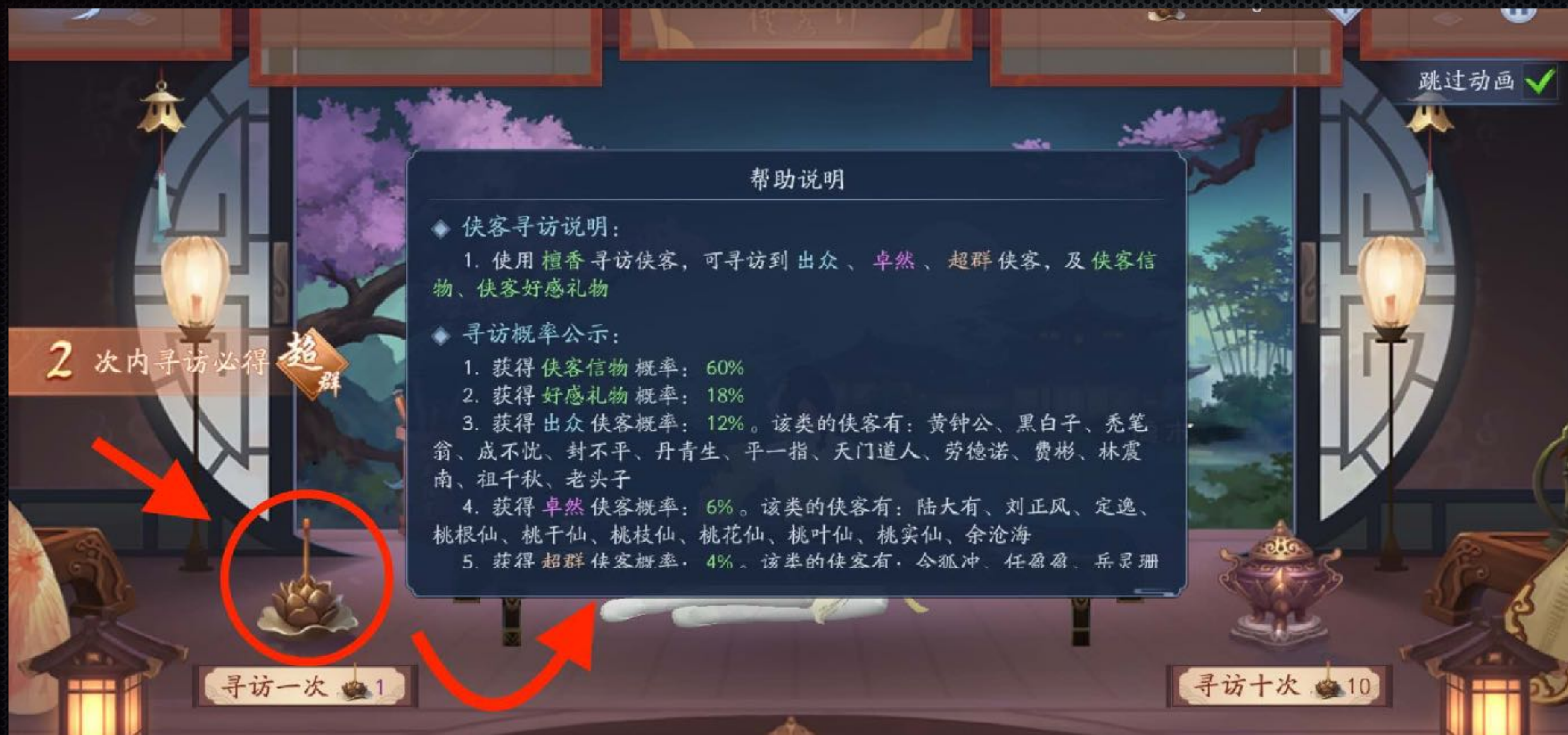
# Tapping a small generic symbol and then following steps (15.4%)



| 活动名称          | 奖励展示  | 平均概率      |
|---------------|---|-----------|
| 纳米车间          | 核心奖励: 雪影(永久)、哨兵M(永久)、暗鹰(永久)、狂想曲(永久)、围攻W(永久)<br>其他奖励: 纳米芯片(3-600个)、科技点(400-600个)   | 平均概率8.4%  |
| 孔雀明王鸿运宝箱      | 稀有孔雀明王套装(永久)<br>稀有孔雀明王戒指(永久)<br>其他奖励: 孔雀明王眼镜(永久)、孔雀明王耳饰(永久)、初级时装碎片(6个)  | 平均概率91.6% |
| 孔雀幸运蛋         | 核心奖励: 孔雀明王(永久)、光芒(3天/7天)、寒凌(3天/7天)<br>其他奖励: 元气假日装(3天)、嘻哈潮语套装(3天)、热辣时代套装(3天)、静静凝视表情(3天)、浅浅一笑表情/憨态乖巧表情(3天)、迷你能量体(1-5个)、初级能量体(1-5个)、淘气喵喵面饰(3天)、喵喵白金手铐(3天)、科技点(300个)、金币(400-600个)、呆萌小猴烈焰(3天)、钻石闪耀胎印(3天) | 平均概率12.1% |
| 每日一欧首次暴击(全永久) | 极品冰晶雪梦羽翼(永久)<br>极品冰晶雪梦手杖(永久)<br>极品冰晶雪梦戒指(1个)<br>其他奖励: 冰晶雪梦眼镜(永久)、冰晶雪梦左手饰(永久)、魅影戒指(1个)   | 平均概率0.5%  |
|               |   | 平均概率87.4% |
|               |   | 平均概率12.7% |
|               |   | 平均概率87.3% |
|               |   | 平均概率8%    |
|               |   | 平均概率17%   |
|               |   | 平均概率15%   |
|               |   | 平均概率60%   |

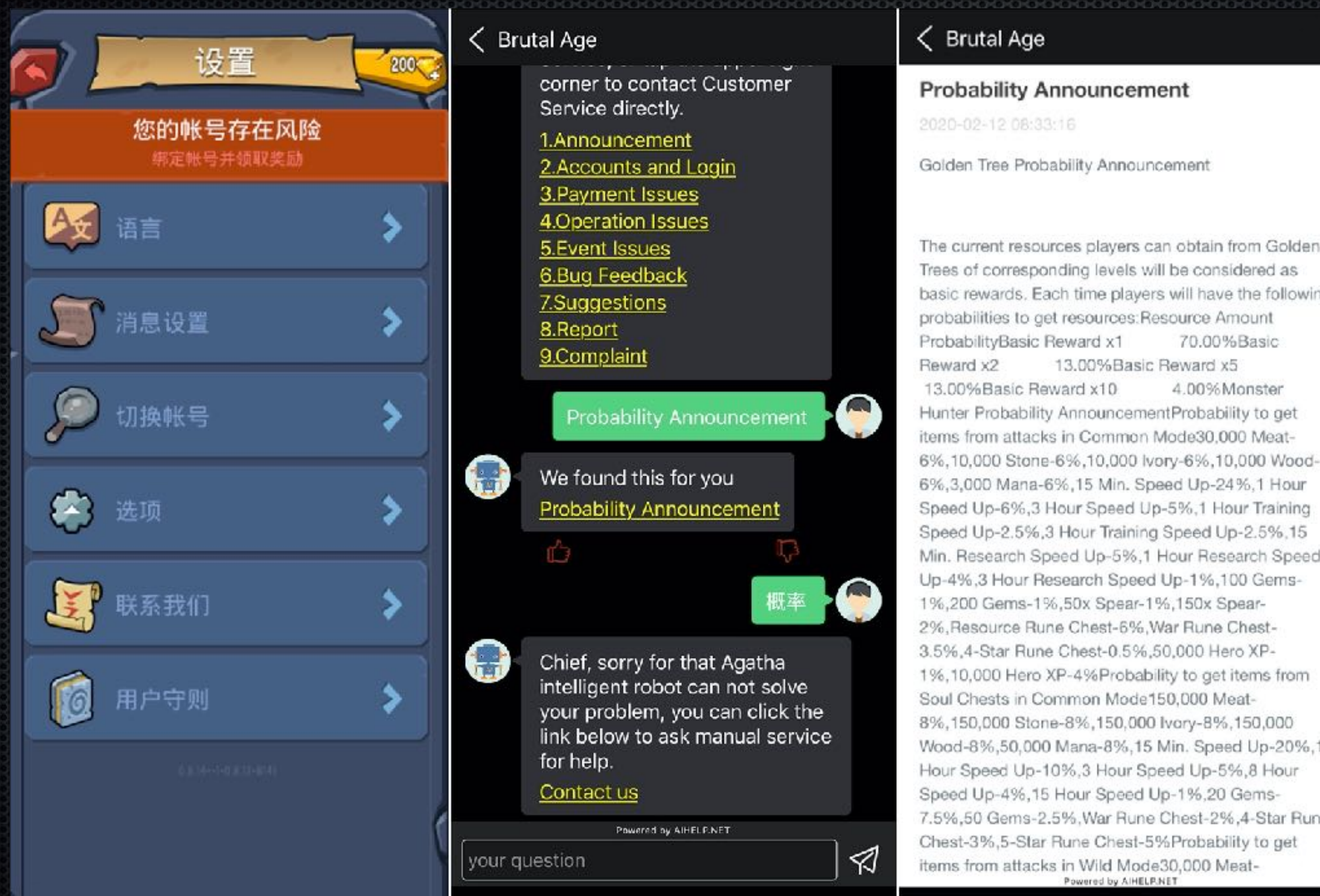


# Tapping graphic element (5.8%)





# Chatting with a customer support bot (1.9%)





# Accessibility: Official Website

| Number of games | Summary of disclosure type   |
|-----------------|--|
| 52 (78.8%)      | Published under the 'news' or 'notice' tab and then chronologically listed alongside other posts       |
| 6 (9.1%)        | Linked directly from the homepage  |
| 5 (7.6%)        | Inaccessible from the homepage   |
| 2 (3.0%)        | Published categorically under the 'news' or 'notice' tab and then pinned to the top of all other posts |
| 1 (1.5%)        | Published categorically under the 'probabilities' tab, which was separated out from other tabs.        |

*Note:* Total sample size = 66 games.

**Table 4: Sub-categories of found official website disclosures**



# Linked directly from the homepage (9.1%)





# Published under a probabilities tab (1.5%)





# Pinned to the top of other posts (3.0%)

火影忍者 格斗手游

忍者公告 视频中心 游戏攻略 忍者图鉴 返回官网

火影论坛 CDKEY兑换

返回首页

## 新闻动态

综合 新闻 公告 活动

|                       |            |
|-----------------------|------------|
| 火影忍者手游概率公示            | 2018-04-18 |
| 第16届忍者无差别格斗大赛线上赛规则    | 2020-05-29 |
| 第15届忍者无差别格斗大赛线上赛规则    | 2020-04-28 |
| 12月26日更新公告            | 2019-12-26 |
| 12月19日更新公告 四周年庆即将拉开序幕 | 2019-12-20 |
| 12月12日大版本更新公告         | 2019-12-11 |



# Published under a tab and chronologically listed (78.8%)

官网首页 新闻活动 游戏资料 视听盛宴 玩家互动 CDKEY兑换

聚贤快报 News 您所在的位置: 官网首页 > 聚贤快报

最新 新闻 公告 活动 爆料

- 【更新公告】华山门派今日正式上线, 华山版本主题曲正式发布 2020-07-14
- 【更新公告】新门派华山正式开放, 新地图临江死道者共赏 2020-07-07
- 【更新公告】累积签到领豪礼, 永久时装又上新 2020-06-30
- 7月1日台服预告 2020-06-24
- 关于部分玩家需人脸实名认证公告 2020-06-10
- 天龙八部手游三周年庆: 帮会友谊赛开始啦! 2020-05-15
- CDKEY兑换活动页面更新修复公告 2020-05-15
- 周年庆名动江湖活动概率公示 2020-05-14**
- 【更新公告】天龙周年庆盛大开启! 2020-05-14
- 【更新公告】三周年活动预热, 签到拿永久时装! 2020-05-09
- 【更新公告】三周年活动来袭, 专属头像框等你来拿! 2020-05-09
- 【更新公告】三周年庆典将至, 8888绑元在等你! 2020-04-21
- 【更新公告】海量活动来袭: 拼图赢好礼, 新服上线昌布缤纷! 2020-04-14
- 【更新公告】帮会守护兽上线, 英雄乱斗技能调整! 2020-03-31
- 转盘活动概率公示 2019-08-21**
- 每周回馈-概率公示 2019-05-15**
- 武动乾坤资料片更新公告 2018-06-26
- 6月13日例行维护公告 2018-06-12

唯美江湖  
进入真实武侠世界

天龙百科  
萌新&大神们都在看

天龙光影  
天龙同好玩家都在这



# Inaccessible (7.6%)

- ✦ A URL link exists for the disclosure, but the player **cannot access it** from the homepage by navigating the website.
- ✦ The only two ways to access the disclosure were:
  - ✦ through a search engine query; or
  - ✦ if the player already knew the URL link.



# How accessible were the disclosures?

- ✦ Video game companies **failed to maximise** the visibility of these disclosures:
  - ✦ **only 9.6%** of in-game disclosures were shown automatically (the most prominent in-game disclosure sub-category), and
  - ✦ overall, **only 13.6%** of website disclosures can be deemed sufficiently prominent as only these were accessible from the game's homepage; displayed under a unique category; or pinned to the top of a chronological list of announcements.



# Conclusion and Recommendation

- Loot boxes are **very prevalent** in China, more so than in Western countries.
- **Only a minority** of games disclosed loot box probabilities reasonably prominently.
- Legal regulation and/or industry self-regulation of loot boxes should **require uniform and prominent probability disclosures** to ensure maximum consumer protection.



# Questions?

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