

Turn Limitation into Strength: Design One-Button Games

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Introduction

It has been said that the easiest game to use would consist of a single button labeled “Push.” When you pushed it, the display would say, “YOU WIN.” The irony of this example is that while such a game would have few, if any, usability issues, it clearly would not be much fun.

A small keypad and limited game controls are often considered major limitations in developing mobile games. A typical mobile device keypad is no match for the dedicated game control of a game console: the mobile device keypad is optimized for navigating in menus, entering numbers and text symbols, and general good looks, not for accurate maneuvering in frantic action games. So how do developers ensure rewarding gameplay experiences with only one button — and without compromising usability?



The Judo Rule

Limitations in game controls can be seen as challenges to overcome. In *Game Developer* magazine, Noah Falstain presents the Judo Rule: “*Turn your limitations into strengths.*”



“When you find yourself constrained by a difficult circumstance or combination of limitations in design, look for a solution that turns those very limitations into a fun solution. Try to make the limitations work in your favor, not against you.”

- Noah Falstain in *Game Developer*. March 2006

Keypad limitation needs to be accepted in game design, and design should occur around this limitation. Having ten keys for each game action is *not* a requirement for a fun game. The mobile device keypad is not a limitation to the game experience itself — it is possible to design fun and challenging mobile games with simple controls, too.

Simplifying controls

Pretty much everything can be done with one button only. The following list contains strategies and examples for simplifying controls:

- **Automatic action:** Run forward automatically, for example.
- **Combine several actions into one:** Jump and shoot simultaneously, for example.
- **Change action of button:** Jump when facing an obstacle, but shoot when facing a monster, for example.
- **Use different kind of button presses:** Keep button pressed down to stop running; press once to shoot; press twice to jump, for example.

These techniques can also be used to simplify game controls in “normal” mobile games. Many of these solutions can be experimented with using Flash animations from the online article “[One Button Games](#)” at www.gamasutra.com (Berbank Green, 2005).

One-button games

According to Kyu C. Lee, president of Gamevil, there are number of factors that make one-button games popular and successful, especially on mobile handsets ([GDC: Success Factors of One-Button Casual Mobile Games](http://www.gamasutra.com) at www.gamasutra.com, 2006). These include the following:

- **Better fit for small screens:** One-button games are usually simple and don't require much effort from the user. One-button games can be enjoyed by the user even during mobility.
- **Ease of play:** One-button games are easy to play and can be targeted at and played by a wider number of users, from a four-year-old child to his grandmother, and from casual to hardcore gamers.
- **Addictive:** One-button games are more engaging due to their simple nature.
- **Shorter development cycle:** One-button games are much easier to develop, and the time required to develop them is considerably shorter compared to other types of games.

Game design

Some examples of one-button mobile games are presented below.

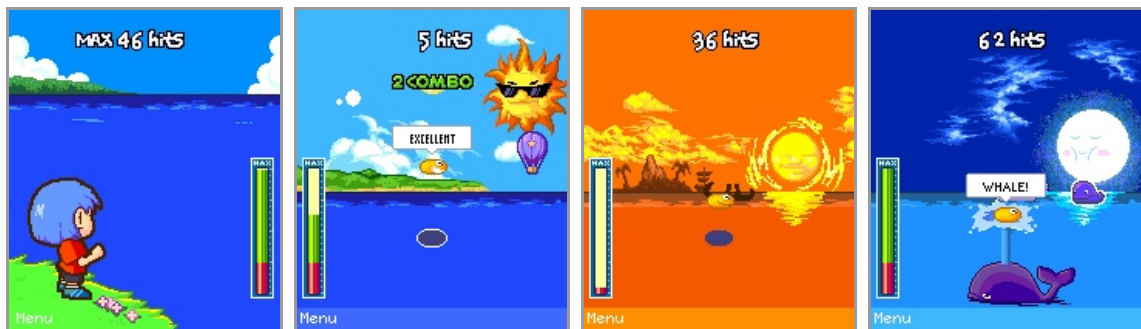


Figure 1: *Skipping Stone* sports surprising graphics and bonus events. Simple one-button gameplay requires a sense of rhythm and accurate timing, which results in addictive gameplay. (Courtesy of Gamevil, www.gamevil.com)



Figure 2: *Kodo* is a one-button multiplayer puzzle game. The game is played in one handset; each player has one button for moving his Kodo. The direction of movement rotates automatically. (Courtesy of Jadestone, www.jadestone.se)

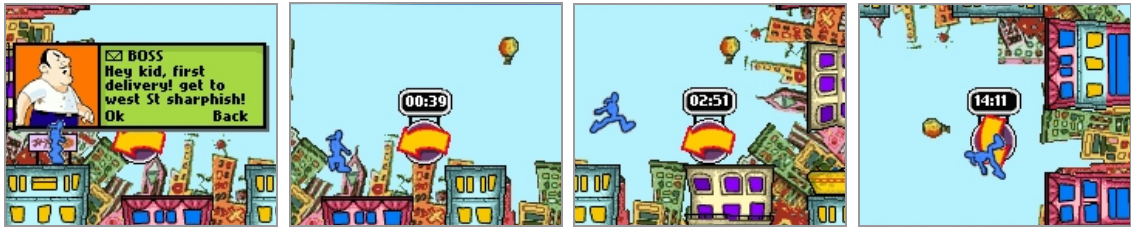


Figure 3: *Freerun* has a nice, flowing experience when jumping from roof to roof. (Courtesy of Creativenorth, www.creativenorth.co.uk)

These games and a few others were evaluated for this document by game-experience specialists at Idean Research (www.ideanresearch.com). The following observations were made about the nature of one-button games.

One-button games are different from “normal” mobile games. The player does not need to focus his attention on the controls or the keypad. He can fully focus on the gameplay and graphics. This means that a one-button game should feel very responsive; animations need to be smooth and game actions need to be immediate. Use animations, effects, and bonus graphics!

Timing and rhythm are essential for a positive experience. In one-button games, the game challenge does not come from the skilled controlling of game characters, but rather from precise timing, fast reactions, and the rhythm of actions. Achieving a good rhythm or completing a series of difficult actions precisely on time is a key element in a good one-button game experience.

A lag between user key press and application response varies between different devices. Especially on some older devices and Java™ Platform, Micro Edition (Java™ ME), formerly known as Java™ 2 Platform, Micro Edition (J2ME™) games, the keypad lag may affect the game experience. A game may not run as smoothly as intended on all supported devices. Developers need to take this device-specific lag into account when testing their game. To achieve the best results, timing and calculation of keypad lag may need to be optimized for each supported device.

Due to the limitations of a one-button game, it should have many stages or levels so that the player has a chance to rest his thumb.

To summarize

- A mobile device keypad is not a limitation to the game experience.
- Animations need to be smooth and the game needs to feel responsive. Graphics should vary to keep the player interested.
- Interaction should emphasize rhythm, timing, and skilled chains of actions.
- Techniques from one-button games can be used to simplify game controls in “normal” mobile games.

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