Code 4: A Pervasive Game for Organizational Change

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ABSTRACT
Promoting organizational change within large government bodies remains an elusive goal. The game Code 4 is developed to create a coherent fully mixed media approach to eliciting organizational change effects by employing employees as the primary actors (players) in a game. The Code 4 game is set in an analogous world with a clear cause to action during a dystopian financial crisis and with rules that mirror but also counteract existing bureaucratic processes. The gameplay rewards successful collaboration regardless of the existing organizational framework. In-game player behavior and results from surveys indicate that most players become wholly engaged with both the core game and with the supporting encounters and that the transfer of game effects is successful.

Keywords
games, serious game, organizational change, cross media, trade, scenario, agile, pervasive game, metagame, applied game

BRIEF
Code 4 is a team based trading game for organizational and cultural change in a large government body. The game is set in a dystopia where a collapse of the financial system has caused a nationwide liquidity crisis. Players are tasked to keep the economy running by acquiring resources and fulfilling demand in a virtual marketplace thus creating the core trading game that Code 4 hinges upon.

The background story details the crisis and contains elements of a power struggle as the bureaucracy and its leadership shift to adjust to the new order. Players need to organize themselves, situate themselves within the new political order, and reconsider their own values to successfully play the game.

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The bureaucracy in the story is intended to mirror the government body that the game was developed for, creating a fictional but analogous world. The government body wants to use the game to improve players along 11 personal development axes: Trust, Goal Driven, Prioritizing, Customer Service, Visibility, Leadership, Initiative, Flexibility, Prevention, Judgment and Intrinsic Motivation. Hubbub was tasked by Herman Koster of Demovides to create a pervasive game to achieve this goal with support from Marinka Copier of the Utrecht School of the Arts.

SETTING

The trading game confronts players with a large complex market that they can impossibly manage individually. Players operate in four teams of 12 and are allotted 1.5 hours a day to coordinate their actions. Players are not told how to organize themselves but are encouraged to figure out ways to self-organize. The gameplay mechanics reward inventive, effective and efficient ways of collaboration.

Gameplay is designed to be antithetical to day-to-day operations in the organization. It is much more free form and allows for large amounts of leeway. Players can apply personal discretion judiciously. Each player is placed in a team that is wholly separate from their normal position in the organizational chart, to isolate them from undue influencing by superiors and existing work relations.

To assist players in the translation of their gameplay experiences to their day-to-day work circumstances, they have weekly confidential sessions with a trained coach. Code 4 is played in a safe environment to ensure trust and to get players to open up and share findings that could be important to the process but adverse to the encapsulating organization. All data about the game and evaluations as well as all coaching and training sessions are separated from the rest of the organization by a Chinese Wall.

DESIGN AND DEVELOPMENT

The Code 4 production process consisted of conceptualizing, designing and developing a custom web application as the primary interface to the trading game to deliver story and gameplay. The website is the main delivery mechanism. Additionally players interact with a number of in-game characters via e-mail and in real life (with the characters being played by actors).

Conceptualization took place before the development process and resulted in the guidelines specified in a brief along with specifications of the development axes and their pertinence to the game and the organization.

Design and development took place in an integrated iterative process where over the course of four months a team of five – a producer, a game designer, an interface designer, a backend engineer and a copywriter – designed and produced a game with all supplementary material. Development took place in two-week agile sprints where most sprint end points culminated in either an internal (prototype) test or a live client test.

The game design was modeled in paper prototypes initially, but quite early in the process it was also prototyped in functional software so live game tests could be conducted. Internal testing of prototypes served to guide the design and technology choices for the core game, whereas client tests with more polished prototypes focused on gauging player load and experience.

After several longitudinal tests of the gameplay, scenarios and story scripts, production culminated in a pilot where Hubbub ran the game at full scale with support from Demovides. A brief redesign phase after the pilot ensured final issues were resolved before the game was delivered to the client as a product to be run independently at their own discretion.

RESULTS

The game was well received during the pilot with many players enjoying the base trading game in and of itself. Logs showed that many players played far more than the allotted 1.5 hours a day and also did not keep to the standard office hours. Further research combining gameplay load and workload showed that employees were capable of more (both in game and in work) than they were doing currently.

The back-story, mixed media encounters and organizational change elements provoked dramatic transfer effects and metagaming as was witnessed by the puppet masters and in the confidential review sessions. Playful behavior transferred out of the context of the game and became the subject of serious discussions and even sometimes conflicts in the workplace. Players experienced these events as confrontational but also as highly educational.

Players' verbal responses contained a lot of discrepancies and proved to be a poor indicator of game experience. Observation of actual players' performance and anonymous feedback from the coaches combined with surveys conducted pre- and post-game indicated to us that almost all of the intended organizational change effects were achieved. Those few that were found to be lacking were improved upon during the redesign phase.

Based on these same observations we can conclude that 80% of the players received an actual learning experience. In addition, 30% of the players reached the level of 'double-loop learning'. These players not only asked themselves if they were doing things correctly, but also if they were doing the correct things. Finally, a lot of players are able to transfer their learning experience to an 'out-of-game cultural change'.

CONCLUSION

Initial findings indicate that a pervasive game designed for organizational change can shake up an organization in ways that traditional change methods cannot. Results as far as they can be disclosed are forthcoming after review with the client. A point for future inquiry is how the finished product will be adopted and employed by the organization and how both playing and running the game will provoke and sustain change within the organization.