

## **NEGATIVE TESTING—CAN YOU BREAK IT?**

Testing a game that may have a thousand subsystems, each of which may connect with 50 other subsystems, is a big job, but after changes are made, a tester needs to check what can break the system, an overwhelming task.

"The general method of performing tasks and expecting simple results works to a point," said Hartsman. "Affirmative testing of what is implemented is definitely the first line, but after that, you have to do the negative tests to find every single outcome. "Goal one, make sure it works. Goal two, make sure there is no obvious way to break it."



Natives of Freeport would not be welcome in Qeynos.

## INTUITION

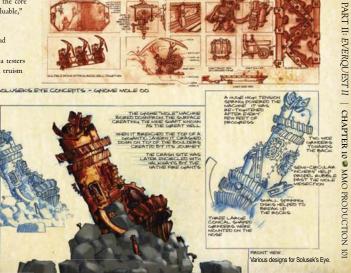
Good developers and testers are dessentially players who not only comprehend the game but also have an intuitive understanding about how the systems work. "A great tester who knows that a particular piece of content is going to interact poorly with the core of the encounter system is invaluable," said Hartsman.

According to Hartsman, SOE had approximately 50 paid testers on EverQuest II, but the 50,000 Beta testers were a big part of the effort. "A truism of MMO testing is

that 100,000 people are infinitely smarter than 100 of us," he said, adding, "Beta testers are going to go break stuff and do things that wouldn't have occurred to us to replicate."

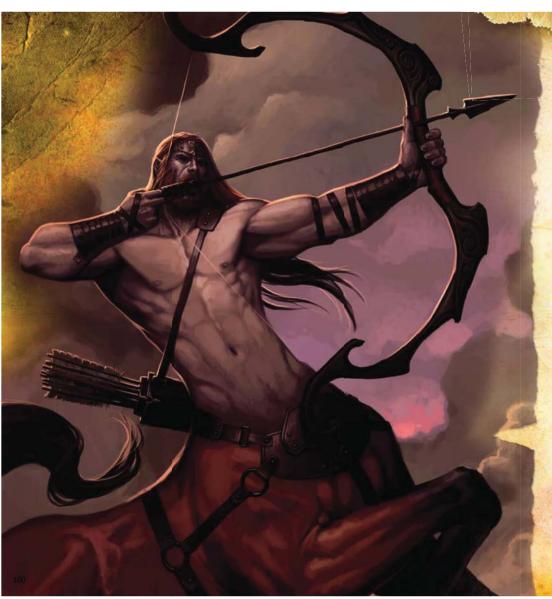


SOLUSERS EYE CONCEPTS - GNOME MOLE OO



Q: What is the Gnomish racial landmark found in the Baubbleshire?

- 1. The Giant Mug of Ale
- 2. Ye Olde Spanner of Luck
- 3. The Fountain of Spirit
- 4. The Spectacular Sprocket of Ak'Anon



## BALANCE AND IN-GAME ECONOMICS

One of the vibrant aspects of an online world is the game economy, which affects every player and can add to, or detract from the fun of playing the game.

"You can think of every single system in an MMO as its own economy, whether it's the economy of hit points, experience points, or gold and platinum." said Hartsman. "Everything is an economy and, what this really comes down to is, how do you balance that in the game?"

The difficulty in creating a well-balanced economy is that it can often lack the dynamics that make up an exciting game world. "You can overbalance and end up with everyone being equally poor, or you can under balance and end up with everybody being equally rich, or you can have an economy that is slightly out of balance, which tends to mimic the real world," said Hartsman, a fan of inflationary economics in a persistent world. "People want to feel like they're actualizing more than they can in the real world, and it's important that online games give them that opportunity."

At the same time, game designers needed to be able to control the basic inflow and outflow of money in the game world. "You need to be sure that your game doesn't break when some people play more than others and end up with a disproportionate amount of wealth," said Hartsman.

To handle the income and outflow sources, or "faucets and drains," game designers used giant Excel spreadsheets to create workable game economics. "You simulate systems in Excel first...then you implement them and, at some point, move into seeing how the actual system is behaving," said Hartsman. "The sheer number of spreadsheets behind any game is absolutely staggering."

## THE PRODUCER'S ROLE

"Twe never run into a title that's more abused than 'game producer," said Hartsman. "At some companies, the producer is a lowon-the-totem-pole job, and they just manage someone else's schedule. At SOE, the producer is the guy who's in charge of the game."

If you need some help, he's happy to get involved," said Hartsman. The SOE producer was in charge of getting products out the door, setting the tone of the project and building the team. "On a given day, a producer does everything from being a

friend, to hiring and firing people, to making sure that a project is on track in terms of vision and schedule, to getting the bugs fixed," said Hartsman.

Describing the day-to-day pressures of a producer's life, Hartsman said, "I thrive on controlled chaos, so for me, it was perfect. I'd have weeks where I was very quietly progressing on new content, and then I'd have a week where a database explosion caused the servers to start losing live data, and in that instant, I would think, I can tell you exactly what the next 10 days of my life are going to be like because of this moment."

Comparing his job to that of a television producer, Hartsman said, "Producers are in charge of making sure that their current audience remains happy and, at the end of the day, that's where the responsibility lands."

