

The creative science of video games

SMU Associate Professor Ted Tschang dissects the creative processes that drive the billion-dollar video games industry.

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AsianScientist (Feb. 5, 2015) - By Yamini Chinnuswamy - When Associate Professor Ted Tschang from the Singapore Management University (SMU) Lee Kong Chian School of Business first had the chance to use a personal computer, he found it fascinating to boot up a video game and watch strange figures dance around the computer screen.

“It was like another world,” he explains. “It takes a lot of imagination to create a product that a user has to live in for hours and hours.”

But while Professor Tschang harboured ideas of becoming a game designer as a teenager, those thoughts left him as he embarked on an academic odyssey that was to take him through degrees in engineering, economics and public policy.

The opportunity to study video games as a creative process came naturally in the early 2000s when, on joining SMU, he became interested in understanding the knowledge-based economy, right down to its cognitive elements. Naturally, as the newest creative industry at that time, the video game sector came to his mind.

“To me, understanding the creative design process behind such products is one frontier in the understanding of human creative thought,” he says.

The design of video games as an area of research

According to a 2014 survey commissioned by the Entertainment Software Association (the US trade association of the billion-dollar video game industry), nearly 59 percent of Americans play video games.

To understand this industry better, Professor Tschang studies the creative design process behind video games. He travels to countries such as the US to visit and observe the inner workings of video games studios for weeks at a time.

“Ultimately, you can’t study creativity in a lab,” he says. “That’s too restrictive.”

Dissecting the technical language of their discussions and the logic behind their decisions can be challenging, says Professor Tschang. This explains why he also conducts interviews with game developers to better appreciate their mental processes as they work. But he adds a caveat that these interviews are limited to only what the developer remembers the most.

For a more robust long-term dissection, he finds diaries and other on-the-spot observations more useful.

“Very few of them write diaries,” he admits, “but for those who manage to capture long stretches of the design process, we can dissect the thought process that goes through each design decision. There are countless of such decisions in a typical design process.”

One of the early observations Professor Tschang made is that there is a strong inherent tension in the process of designing a game.

“Games have to cater to human desires,” he explains. “One player might want a game that is more fun, while another might want one that is more challenging. Another might want a balance. The challenge for the designer is to create a product that caters to as many types of players as possible.”

Another insight that Professor Tschang has gained is that the creative design process behind video games appears to be more complex than it is for other entertainment products.

“User experience is critical in video games,” he says. “The smallest design decision can have great consequences for the player’s experience.”

Citing an example, he said, “In one product, the developers refused to add a ‘save game’ feature at various points of a level of the game, as they thought that the user should go through the whole sequence again after one ‘dies’.”

But the game received poor reviews from its users, prompting the developers to introduce a more regular ‘save game’ feature for future products.

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“It turns out that the user experience is ruined when players need to repeat long stretches of a game they have just played through,” he muses.

One trend that Professor Tschang has observed in his studies is that cultural influence can play a great role in product design practice.

“For example, unlike Asia or Europe, the US does not have a long, deep cultural history. By that same token, history does not bind them; their video games are able to break the mould in building fantastical worlds,” he explains.

In contrast, creative products from Asia tend to be bound to the region’s rich historical background, he notes.

“For a while, it seemed like every studio in China had a game about the Three Kingdoms! When we studied video game studios there, we saw that they were trying to get away from that topic, only to turn to other historical stories. The result was yet another game featuring Chinese sword-fighting.”

This is more than a game

Professor Tschang’s research into the design of video games started yielding insights around the same time as design thinking became a topic of increasing interest to business schools and businesses around the world.

But the question remains whether basic principles of design can be applied to completely divergent businesses. To address that question, he validates his emerging understanding of design theory as he teaches classes on design thinking and business model innovation at the Lee Kong Chian School of Business. The School runs a Capstone course on business model innovation with a heavy dose of design: a class that most business students now take.

“At the most fundamental level, the design process and means by which we come up with designs are more or less the same,” he says. “The domains may be very different, but the way our minds operate is universal. On top of that, the need for innovation demands creative cross-fertilisation across different domains—some very different from each other, some only adjacent to them.”

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