

Thriving in Innovative Environment

Dialogue

By LONG Yun & SU Hong

Eighteen years ago, Peter Poechmueller, a German engineer with management skill and experience, embarked on a journey to China. Initially, Poechmueller's arrival in China was motivated by a desire for adventure.

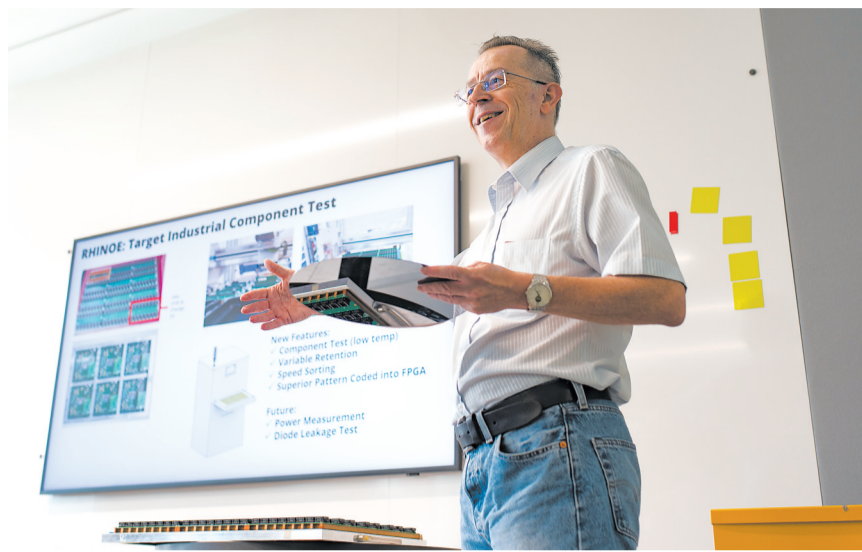
With decades of expertise in micro-electronics and driven by the need to be innovative, the problem-solver for German industrial giant Siemens was often sent to locations where problems needed fixing. He thrived in environments where each day brought new challenges. For him, the excitement lies in the unknown. When a corporate shift resulted in a reassignment, Poechmueller regarded it as an opportunity and volunteered to go to China.

Over time, Poechmueller grew professionally in China and built a work and personal life here. He met his wife, started a family, and gradually found himself rooted in Chinese culture. "I thought I'd be in China for two years at most, but it ended up being my longest assignment ever. I don't regret it at all," he told *Science and Technology Daily (S&T Daily)*.

Currently, he is a professor at the School of Microelectronics and the CEO of Neumonda Technology. His experiences across Asia, Europe, and the U.S. have shaped his unique approach to technology and leadership, which offers insights into semiconductor development and cross-cultural collaboration.

A career built on passion and adaptation

Poechmueller's interest in engineering began at an early age. Growing up in the 1980s, without easy access to computers, he took matters into his own hands. "I built my own computer, programmed my own games, and modified



Dr. Peter Poechmueller. (COURTESY PHOTO)

my TV to connect to it. That's how I got into this field," he told *S&T Daily*. This hands-on approach laid the foundation for a career spanning over 30 years in semiconductor technology.

When asked about his experiences working in diverse environments, Poechmueller emphasized how this diversity shapes his perspective, "Every culture thinks it's the best, but they all achieve their goals in different ways. This experience has relaxed me and made me more open-minded."

This openness plays an essential role in the way he deals with challenges. He appreciates the meticulous nature of German engineering, which prioritizes long-term planning, yet he recognizes the value in the speed and flexibility of Chinese engineers. "Sometimes the best approach is a combination — planning like a German, but being pragmatic like a Chinese engineer."

"Highly efficient, flexible and pragmatic are the most impressive parts of Chinese culture," he said.

Shaping leadership through cross-cultural experiences

Leading cross-cultural teams in

global R&D projects is not an easy job. At first, Poechmueller noticed that Chinese engineers were often reluctant to express difficulties or ask for help, in contrast to the open communication encouraged in his own culture. Such differences can lead to misunderstandings. Through years of experience, he learned that effective management with global vision requires mutual understanding and the ability to bridge gaps in communication.

According to Yin Heguo, his long-term Chinese business partner, Poechmueller has both the rigorous work style of the Germans and the wisdom of the Chinese, and he has a deep understanding of Chinese culture. "In my eyes, he is the 'Bethune' of China's semiconductor memory industry," said Yin.

Poechmueller's experiences make him fully aware of the role of adapting his management style to tailor the unique needs of each team. Whether leading large organizations like Siemens or smaller companies, he has consistently attached great importance to the need for a broad skill set and flexibility. According to this German engineer, in big

companies, people have a narrow focus with extensive infrastructure support. People will gain speed and satisfaction from working in smaller companies. "I find life in smaller companies more fulfilling because you see the direct impact of your work," he said.

The evolution of semiconductor technology

In terms of his involvement in memory product development, Poechmueller noted that the semiconductor industry has seen rapid changes, especially in Dynamic Random Access Memory (DRAM). "What's striking is not just the technology, but the economic aspect behind it. This industry fosters a tough, dynamic environment where only a few players survive."

As the industry develops, the integration of AI has become a game-changer. Poechmueller sees the significance of AI in semiconductor development. AI requires high-speed communication, which has driven changes in DRAM. Today, AI memory must handle thousands of input/output operations while minimizing power consumption. Poechmueller said that, "Theory behind this has existed for 30 years, but we didn't have the computational power to make it practical. Now, with advances in technology, AI is transforming the industry."

Poechmueller joined Shandong University in 2018 and he saw it as an opportunity to advance semiconductor research. "I'm an engineer who focuses on practical aspects. I joined the university for the resources to develop new technology and pay back to the society," he said.

In 2013, he was presented with the Chinese Government Friendship Award, which is the highest honor for foreign experts who have contributed to social development and international cooperation. As he puts it, "I am honored. But more importantly, this is my work to make the world a little bit better and safer."

China Impression

Wukong Rides High, Chinese Culture Goes Global

By LONG Yun

A Chinese video game, *Black Myth: Wukong*, has become a global sensation. Its latest trailer has an arresting dialogue: "Use powerful methods, but have a compassionate heart and that's your destiny." This reflects the essence of the game's central character, Sun Wukong, or Wukong, a figure with a strong will, a rebellious streak, and persistence.

Black Myth: Wukong fulfills gaming enthusiasts' desire for high-quality games. It not only impresses with its visuals and combat mechanism but also offers players an immersive experience in Chinese culture.

For culture lovers, exploring the cultural heritage behind the game is equally exciting. The game's plot and depiction of Chinese historical sites like the Foguang Temple, a Tang Dynasty (618-907) Buddhist temple in Shanxi province that is a UNESCO World Heritage Site, and Chinese mythological figures create an interactive cultural experience that sparks curiosity and encourages more people to learn about China's heritage.

Exploring a Chinese classic

Developed by Game Science, a Chinese video game developer that is now almost a household name, the game blends modern gaming elements with time-honored Chinese mythology, inspired by *Journey to the West*, the Chinese classic about monk Xuanzang's pilgrimage to India.

At the core of *Black Myth: Wukong* is the legendary story of the Monkey King, Wukong, who accompanies the monk and keeps him safe and is one of the most iconic characters in Chinese literature. Written by Wu Cheng'en during the Ming Dynasty (1368-1644), the original book is a tale of adventure, spiritual growth and mythical creatures. The game incorporates various mysterious figures, moral dilemmas and supernatural elements that are prevalent in traditional Chinese tales.

While *Journey to the West* is a Chinese classic, its themes of adventure, personal growth and spiritual exploration have universal appeal and are shared by many global masterpieces. The story too has been adapted in various countries and languages globally. Iconic characters like Wukong have become cultural symbols not only in China

but also in other parts of Asia, including Japan and South Korea.

The cultural heritage behind the game

Black Myth: Wukong not only draws inspiration from Chinese mythology but also integrates elements of ancient Chinese architecture. The developers have meticulously crafted environments that showcase traditional Chinese aesthetics such as dougongs (bracket sets), paifangs (archways), and stone carvings.

According to incomplete statistics, out of the 36 locations featured in the game, 27 are in Shanxi. The Foguang Temple on Mount Wutai is one of the oldest surviving wooden structures in China.

Known for its harmonious design and grand halls, the temple embodies traditional Chinese architectural principles such as symmetry, balance, and respect for nature. Its wooden beams and intricate carvings reflect the essence of Tang-era architecture. In this game, similar architectural styles can be seen in the game's depictions of ancient temples.

Another spot in the game is the Xiaoxitian Temple, a hidden gem in Shanxi famous for its stunning caves, temples and cliffside sculptures. This temple blends Buddhist, Taoist and Confucian elements. The grottoes and statues reflect the splendid religious and cultural history of ancient China.

A culture industry professional who once visited this tourist attraction told *Science and Technology Daily*, "It truly is a national treasure of the highest level. The sculptures are exquisite, giving a sense of divine presence." The game integrates similar environments, featuring cave temples with Buddhist statues.

These elements are just a fraction of the Chinese cultural legacies that the game presents. Other cultural treasures such as the Dazu Rock Carvings, Buddhist art in Chongqing city in southwest China, and the Lingyin Temple in Hangzhou, as well as Shaanxi folk songs are also offered in the course of the packed action.

Black Myth: Wukong has not only sparked a wave of enthusiasm for traditional Chinese culture but it also projects a thriving, modern China, where technological innovation empowers the cultural industry.



The photo shows a cave with Buddhist statues in Xiao Xitian Temple in Shanxi province, which is simulated in the game *Black Myth: Wukong*. (PHOTO: VCG)

Australia-China Sci-tech Cooperation Yields Mutual Benefits

Overseas Echoes

The strong collaboration between Australia and China in science and technology has already yielded impressive results and mutual benefits, said Nobel laureate Barry J. Marshall on August 15.

"By continuing to build on this foundation, we can tackle major challenges from health care to environmental sustainability, and work towards a better future for our nations and the world," he said.

Marshall delivered a speech at a reception celebrating his winning the China International Science and Technology Cooperation Award 2023 hosted by the Consulate General of the People's Republic of China in Perth. He is the fifth Australian to receive the award.

"The China International Science and Technology Cooperation Award is more than a personal accolade," he said. "It highlights the importance of cross-border collaboration in driving innovation, sharing expertise,

and making scientific breakthroughs that benefit everyone."

Marshall and J. Robin Warren were awarded the 2005 Nobel Prize in physiology or medicine for showing that bacterial infection, not stress, was to blame for painful ulcers in the stomach and intestine on October 3, 2005. In the past decade, Marshall has devoted himself to cooperation with Chinese colleagues and partners to transfer his research results into products and to benefit both Chinese and Australian people.

Stephen Dawson, Western Australia's science minister, said at the event that Marshall had been a champion of promoting science cooperation, collaboration and exchange between China and Western Australia. His work and the award he won would help to inspire further collaborations between the great scientific minds of Australia and China.

"I look forward to witnessing the continued development of Western Australia's strong relationship with China in science and technology," he added.

Chinese Consul General in Perth Long Dingbin said that Marshall set up an academician workstation in central China's Henan province in 2017, and he was affectionately known by the local people as the civilian doctor. He said Marshall is a model to follow and strengthen the China-Australia bond.

Chinese Ambassador to Australia Xiao Qian sent a congratulatory letter to Marshall, which was announced at the event. Xiao said that the award Marshall won is also a recognition for all Australian scientists who have long been committed to scientific and technological exchanges and cooperation with China.

"We sincerely appreciate your outstanding contributions to promoting China-Australia scientific research, exchanges and cooperation. Nurturing high-level patents and improving public health, all of which are really manifestations of a shared vision of building a community with a shared future for mankind in China-Australia scientific cooperation."

Source: Xinhua



Prof Marshall (middle) jointly with Chinese Consul General in Perth Long Dingbin (third from left) and VIPs appreciate China-Australia friendship. (COURTESY PHOTO)

From page 1

However, *Black Myth: Wukong* has not only earned respect from players and industry insiders, but has also ignited a wave of inspiration among talented creative teams. This game marks a breakthrough for the Chinese gaming industry and affirms a shift towards high-quality gaming. As players humorously put it, "It's like a village finally producing a college graduate after all these years."

The fusion of technology and story

A great game inevitably relies on advanced technology. In terms of technological innovation, *Black Myth: Wukong* has achieved notable breakthroughs. The game utilizes Unreal Engine 5 and integrates ray

tracing and global illumination technologies to create a visually unprecedented world. The development team employed a range of sophisticated tools for character modeling, including Autodesk Maya, Autodesk 3ds Max, Blender for detailed modeling, and Substance Painter for high-quality textures. Marvelous Designer was employed to design and simulate character clothing, ensuring each garment moves naturally.

Dynamic effects are enhanced through Unreal Engine 5's Groom system, which achieves lifelike hair render-

ing and boosts immersion. The team combined real-world scanning with the Nanite virtualized geometry system and used the Lumen full dynamic global illumination system for realistic lighting and shadow effects. Motion capture technology has advanced with motion matching and facial capture techniques, which create fluid and natural motion transitions.

However, the technology in *Black Myth: Wukong* is more than just a technological achievement; it is a tool for storytelling and emotional engagement. Every exquisite scene and flashy action are

designed to further the narrative and shape the characters. This immersive experience offers players visual and interactive pleasure and an engaging experience with the story; players feel as though they are "living with the characters."

Innovative development strategy

Major game companies usually adopt "agile development" and "incremental updates" models. These models enable continuous adjustments to product direction, quick fixes, and the addition of new content through rapid iterations for adaptation to market demands

and user preferences. For example, after the release of *Genshin Impact*, miHoYo attracted and retained players by regularly introducing new maps, characters, and storylines. This approach created a content-driven long-term operation model. However, the frequent updates can sometimes lead to fluctuations in product quality and the risks of rushed, incomplete content being delivered.

In contrast, Game Science has taken a different strategy. As a small independent studio, Game Science is free from the limitations of large companies,

making it possible to focus resources on core objectives. They chose a longer development cycle and dedicated seven years to the optimization of almost every aspect of visual performance, including environment rendering, character modeling, and lighting effects. The aim was to ensure every detail met high expectations.

The success of *Black Myth: Wukong* is not only a milestone for the Chinese game industry but also a testament to China's growing technological innovation. Game Science has indicated its intention to explore the boundaries of technology and culture, with plans to deliver to global players more top-tier games with Chinese characteristics.