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## The frontier of Taiwanese manufacturing innovation

Over the past decade, facing severe business environment changes, especially the impact of fierce competition in China and other emerging countries, the continued challenge manufactures innovative Taiwanese companies are gradually attracting attention. Here, I will clarify the frontier of Taiwanese manufacturing innovation.

Recent innovation theory is constantly emphasized the importance of research and development, joint development, co-production and joint marketing with external organizations through collaboration. Concrete presentation is modularization in design or production. Furthermore, it is also emphasized the inter-organizational relationship and open innovation by cooperation with suppliers, competitors, customers, and external research institutes .

Based on these two dimensions, I will present two innovative patterns through the frontier cases of Taiwanese bicycle and Panasonic notebook computers production in Taiwan. Firstly, it will co-create new products, new processes and new markets with affiliating companies overall supply chain-related organizations including of a competitor and module production companies. Secondly, it will cooperate with component, part and modular suppliers to develop new products through module design, production and to create high customer value. Such development patterns, based on Taiwanese companies' customer value creation, is considered as a co-creation model, a new concept of manufacturing innovation.

## Profile

Professor Ren-Jye Liu received his Ph.D in Business Administration from Kobe University in Japan in 1991. Liu was Chairman of his department at Tunghai University (1998-2001) and an advisory committee member for the Taiwan Economic Ministry (1993-98). In the global academic field, he has been a Visiting Professor in the Business School, Kobe University (2006), Osaka City University (2010-), and was a visiting faculty member in the Wharton School, University of Pennsylvania (2002-03). In the private sector, Liu has been the director of the Precision Machinery R&D Center and the Taiwan Machine Tool Foundation.

He is the author of eleven books in Taiwan as well as eight expertise articles in academic books in both Japanese and English. He is the winner of many academic awards, including Carolyn Dexter Award Nominee (2007, the Academy of Management), the Best paper Award (1997, Association for the Study of Industrial Management in Japan), the Excellent Book for Business Award (1997,1998, 2009, 2105, the Taiwan Economic Ministry).