



Better quality products: Bridgestone

The Bridgestone Corporation is one of the world's largest manufacturers of tyres and rubber products, selling in over 150 countries and employing over 150,000 people. This result is the fruit of the work started by the company's founder, Shojiro Ishibashi, who on the production of his first tyre in 1931, set out his mission as "Serving society with better quality products."

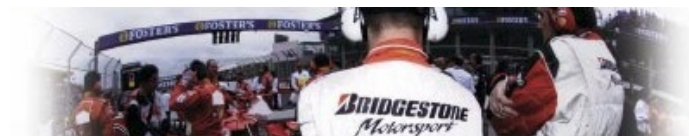
The company expanded rapidly in the 1930s and 40s with the massive production of types in a new factory in Kurume, Japan. In the 1950s the company changed its name to Bridgestone, the literal translation of the founder's name, Ishibashi, into English. The 60s saw Bridgestone riding the wave of the rapidly expanding car market and opening its first overseas plant in Malaysia. The transformation of Bridgestone into a world player, however, came in 1988 with its purchase of the American Firestone Tire & Rubber Company, at the time the world's number two tyre manufacturer.

Following the merger with Firestone, Bridgestone conquered the European market. With six Europe-based plants and 100 Research and Development centres, Bridgestone Europe (BSEU) today develops and a wide range of tyres and diversified products for the European market, both as original equipment and for the replacement markets. Bridgestone distributes over 20 million tyres a year throughout Europe and exports to markets that include Japan. BSEU has 10,130 direct employees in Europe, as well as having created thousands of jobs among its suppliers and distributors.



Tyres
RE050 RFT

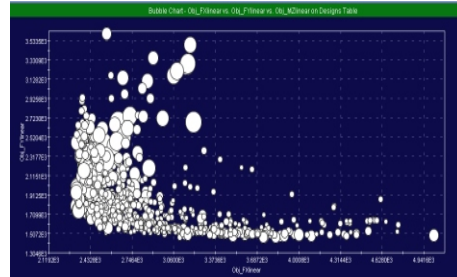
Bridgestone is the fruit of its commitment to quality technologies. The list of its achievements is impressive, ranging from the development of "Multicell Compound" for nailless snow tyres, to its Potenza tyres for Formula 1 that helped deliver five consecutive Constructors' World Championship titles to the Scuderia Ferrari Marlboro Formula One team. Yet another innovation, the 'Run Flat' tyre that allows a vehicle to be driven even when the tyre is flat, has caught the attention of those carmakers that fit it as original equipment. True to its original mission, Bridgestone is currently working on a number of interesting projects aimed at ensuring better safety for all vehicles, from cars to trucks, in order to deliver better quality products.



Visit Bridgestone's site:
www.bridgestone-eu.com

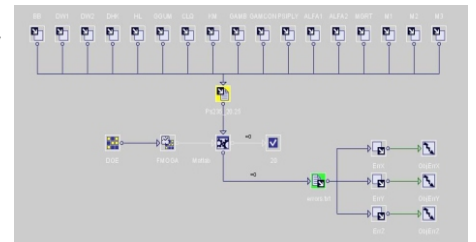
Using modeFRONTIER in design

The Bridgestone Technical Centre in Rome uses modeFRONTIER to reduce the differences between the results obtained with computer analysis models and the data obtained through experimental testing.



Problems of "model updating", or understanding which data obtained from various software packages have the greatest impact on the product's characteristics, are often encountered when designing a

new tyre to meet certain comfort/noise/handling parameters. Thanks to modeFRONTIER, Bridgestone's design staff can automatically identify the data sets from which to obtain given results compatible with the design objectives and the same as those obtained through testing. The data produced by modeFRONTIER come from various software systems on the basis of the tyre model to be made: Adams, MatLab and Fortran. The modified genetic algorithms classified as MOGA and FMOGA have been particularly efficacious.



Why Bridgestone chose modeFRONTIER

"Following a series of careful evaluations," says Fernando Baldoni, chief of Advanced Engineering, European Technical Centre "we chose modeFRONTIER because it demonstrated itself to be the only multidisciplinary and multi-objective technology available on the market."

"modeFRONTIER allows us to get the most out of the CAE technologies already installed in our technical departments and to evaluate, faster than before, numerous design alternatives and to make optimised choices in terms of our technical and cost objectives. This in turn has greatly reduced our Time To Market while at the same time improving the quality level of our products. "During the key phase of implementing this new technology" concludes Baldoni "Esteco supported us seriously and professionally, quickly transferring the technical skills and enabling us to be independent and up to speed in a very short time."