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Connected Cars: *Vehicles of the Future*

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Abstract

Modern vehicles are complex systems including hundreds of sensors, actuators, dozens of on-board computers, and sophisticated control and learning algorithms producing gigabytes of data per hour. The ever increasing level of connectivity – *built-in* (integrating on-board electronics with mobile phone), *beamed-in* (Vehicle-to Vehicle and Vehicle-to-Infrastructure communication), and *WiFi* (Vehicle-to-Web connectivity) – brings a new dimension to the traditional automobile transforming it into the ultimate smart mobile device.

State-of-the-art technologies are not only creating new consumer experiences, they are also driving innovation in the automotive industry at an incredible pace in preparation for the future. This presentation discusses the Ford Motor Company approach to connectivity as a transformational environment for creating a new generation of better connected vehicles. Vehicles that can adapt to the driver's personality, conserve energy, lower emissions and improve safety.

Some of the challenging research problems in developing advanced technologies for Ford vehicles are presented. Reviewed are selected examples demonstrating how the perspective of the car as a mobile communication platform permeates the areas of driver assistance, fuel economy optimization, learning and understanding driver's behavior, intentions and preferences, and integrating on-board controls with the cloud ecosystem.



Biography

Don Butler is executive director, Connected Vehicle and Services, Ford Motor Company, effective Jan. 1, 2014. He reports to Raj Nair, group vice president, Global Product Development.

In this role, Butler is responsible for Ford's global integrated connectivity vision and strategy. He leads the development of a near-, mid- and long-term plan for implementation with the goals of delivering a best-in-class customer experience inside and outside of the vehicle.

Butler most recently was vice president, Cadillac Global Strategy for General Motors, where he led the development of the strategy for Cadillac's global expansion.

Butler began his 30-year career with GM, as an engineer, and went on to hold a variety of executive roles, including vice president, Global and OEM business for OnStar, GM's telematics business, and chairman and managing director of General Motors Egypt.

He left GM in 2009 to become vice president, Marketing and Product Planning for INRIX, a vehicle traffic and data services start up. He returned to GM in 2010 as vice president of Cadillac Marketing.

Butler earned a bachelor's degree in electrical engineering from the then-General Motors Institute, now Kettering University. He also holds an MBA from the Harvard Graduate School of Business Administration.