

## 12.3: Global Communication Platform

### Learning Objectives

After reading this section, students should be able to ...

1. appreciate the trade-off between creating global efficiencies and adaptation

One way around the trade-off between creating global efficiencies and adapting to local requirements and preferences is to design a global product or communication platform that can be adapted efficiently to different markets. This modularized approach to global product design has become particularly popular in the automobile industry. One of the first “world car platforms” was introduced by Ford in 1981. The Ford Escort was assembled simultaneously in three countries—the United States, Germany, and the United Kingdom—with parts produced in 10 countries. The U.S. and European models were distinctly different but shared standardized engines, transmissions, and ancillary systems for heating, air conditioning, wheels, and seats, thereby saving the company millions of dollars in engineering and development costs.

### ✓ Minicase: Creating the Perfect Fit: New Car-Seat, DesignBuss (2009)

Imagine the challenge of being an automotive-seat engineer these days, and picture one of the hugest men you know—a large, American male weighing about 275 lbs. Now consider a petite woman, and throw in someone with lower-back pain. Your challenge: design a single seat that comfortably accommodates each of these physically and physiologically diverse individuals, not just for a few minutes but for a 4-hour drive. Welcome to the global automotive design challenge.

While the economic pressures to standardize are becoming stronger, car buyers are getting more size-diverse, more ergonomically distressed, and more demanding of power adjustments and other amenities. Seat developers are responding: they are using more versatile materials, new engineering techniques, digital technologies, and novel designs to make sitting in a car as, or even more, comfortable as sitting in your living room.

This concern for comfort is relatively new; hard benches were the standard during the industry’s earliest days. Even into the 1980s, most cars and trucks had simple bench seating in both the front and rear of the automobile. Automotive seat design only became a crucial discipline during the last generation as Americans began to spend more and more time in their vehicles and as interior comfort and appointments became a major competitive issue.

Federal regulations affect seat design only minimally, with the most important requirements focusing on headrests. And there are distance requirements between the driver’s body and the steering wheel, an issue that can also be addressed with telescoping steering wheels and adjustable pedals. In the end, automakers must mainly make sure the seat design helps the car pass the government’s crash-safety standards.

Consumers are far more demanding. Comfort and ergonomic functionality have become the focal points of seat design. Americans are getting bigger and heavier, and automakers try to design seats that can accommodate everyone from the smallest females to the largest males. This is not a simple feat, with the 95th-percentile American man now weighing about 24 lbs more than 2 decades ago. At the same time, while U.S. women in general also have gotten larger, the influx of immigrants from Asia actually kept the overall increase in the size of the 5th-percentile American woman down to under 5 lbs over the last 2 decades.

And just as airlines and home-furniture manufacturers have had to respond to wider girths by making seats bigger, auto companies are also faced with having to squeeze bigger people into cabins that are getting smaller as gas prices rise. At the same time, seats must secure tiny drivers and allow them to see clearly over the steering wheel and reach the accelerator and brake pedals.

The aging of the American population poses special difficulties. Younger demographics like their seats harder, but baby boomers and older customers are used to a soft seat. Whether this is best ergonomically is not important, despite the fact that more and more consumers are carrying specific maladies of aging into their cars, including back pain, aching knees, and a general decline in the basic nimbleness required to get in and out of an automobile.

It is one thing to design a single seat that can accommodate the frames of the smallest to the largest Americans. Now add the globalization challenge. As automakers seek to globalize vehicle platforms, their seats also have to be able to accommodate the diverse body proportions, size ranges, and consumer preferences of people around the world.

For example, while Europeans definitely prefer longer cushions, and Asians like shorter ones, Americans are somewhere in between. And in China, the second row must be as comfortable as the first because as many as 40% of car owners have a driver, and the owners tend to sit in the right rear seat.

## Source

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I would like to thank [Andy Schmitz](#) for his work in maintaining and improving the HTML versions of these textbooks. This textbook is adapted from his HTML version, and his project can be found [here](#).

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