

Mechanical Engineering Department Seminar

Personalized Production Paradigm

Yoram Koren

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10:30 am - 11:30 am

Room 1690 CSE (Comp Science Bldg)

Future personalized production of automobile interiors will boost the US economy and create new jobs. Instead of compromising on an interior design offered by the auto manufacturer, buyers will be able to design their new car interiors according to their needs: Starting from an open interior space and filling it with available modules.

Automobile interior future modules may include file cabinets, computer stations, sport equipment, microwaves, refrigerators, beds, dog baskets, folding tables, clothing racks, portable-potties for kids, etc.

We are proposing an open-architecture structure for such mechanical components for passenger cars, parallel to the i-Phone open-architecture software, and to the PC open-architecture electro-software.



When this approach is adopted by the auto industry and mechanical-electrical open-architecture standards are established, dozens of small new companies will start to produce special modules (such as dog baskets and storage cabinets), which will evolve to several new industries. In addition to trading used cars, people will trade used modules as their needs change and they want to update and remodel their existing cars.

Because this personalized production business model is beneficiary to both the manufacturers (that are being paid before the product is built) and to the customers (who are getting exactly the product that they need), and because it will generate new industries that produce innovative modules, personalized car interiors could be a significant booster to the US economy. If domestic manufacturers will be able to produce and deliver personal cars within short period, this new industry will sustain in close proximity to the customers and will not migrate across the oceans.

The main engineering research challenges are

1. Creating a new-generation of CAD-based systems by which buyers, who are not necessarily engineers, could easily design their car interiors; it will apply control feedback principles, which will aid buyers to arrive at their desired product.
2. Creating a new-generation of assembly systems that will be able to handle thousands of options, and produce cars at mass-production cost.