

IE301 Product Design and innovation
Exercise (5) [Product Architecture & Industrial Design]

Product architecture

- 1- *Draw a schematic for a wristwatch, using only functional elements (without assuming any particular physical working principles or components).*
- 2- *Describe the architecture of a Swiss Army knife. What advantages and disadvantages does this architecture provide?*
- 3- *The argument for the motorcycle architecture shown in Exhibit 9-5 is that it allows for a lighter motorcycle than the more modular alternative. What are the other advantages and disadvantages? Which approach is likely to cost less to manufacture?*
- 4- *Take apart a small electromechanical product (which you are willing to sacrifice if necessary). Draw a schematic including the essential functional elements. Identify two or three possible clusterings of these elements into chunks. Is there any evidence to suggest which architecture was chosen by the development team?*
- 5- *Can a firm achieve high product variety without a modular product architecture? How (or why not)?*

Industrial Design

- 6- *Visit a local specialty store (e.g., kitchen supplies, tools, office supply, gifts) and photograph (or purchase) a set of competing products. Assess each one in terms of the five ID quality categories as shown in Exhibit 10-11. Which product would you purchase? Would you be willing to pay more for it than for the others?*
- 7- *Develop several concept sketches for a common product. Try designing the product form both "from the inside out" and "from the outside in". Which is easier for you? Possible simple products include a stapler, a garlic press, an alarm clock, a reading light, or a telephone.*
- 8- *List some firms that you feel have a strong corporate identity. What aspects of their products helped to develop this identity?*
- 9- *By what cause-and-effect mechanism does ID affect a product's manufacturing cost? Under what conditions would ID increase or decrease manufacturing cost*
- 10- *What types of products might not benefit from ID involvement in the development process?*