Solution:

(a) Distance of target; Size of target.

(b) Movement Time Fitts’ law is used to estimate the amount of time it takes for a person, using his or her arm, to pick up object, move it, and then place it in a designated target area. Mathematically, Fitts’ law for a particular individual is given by T(s,w) = 105 + 265log2(2s/w). Putting a target in the corner increases the distance between the target and the hand. Long distance will cause more reaction time and exercise time

Solution:

(a) The Gulf of Execution: Customers can buy snacks at the push of a button. However, in practice, the customer needs several steps. First, the customer needs to put in cash or swipe the card, then enter the snack number you want, enter the required quantity, and finally confirm the choice. The difference between a user-perceived execution and the required operation is gulf execution.

(b) The gulf of evaluation: The vending machine gets the snack by entering the number, but the vending machine doesn't tell you whether to enter the quantity first or enter the number first, which may result in the customer not getting the desired snack.

Solution:

(a) Small multiples: are a series of similar graphs or charts that use the same scale and axis for easy comparison. It uses multiple views to display different partitions of the dataset; E.g. For the small multiples, the United States government can divide the number of votes cast by all states into the number of votes cast by each state. This is then broken down into the number of votes each leader gets. In this way, we can clearly tell which leader gets the most votes in each states.

(b) sparkline represent small quantitative data in context, and sparkline usually exist in small charts that are used to show trends or changes in the data set over time. Sparklines are often used with text. E.g: Dow Jones Industrial Average on February 7, 2006. The sparklines should be as high as the surrounding text. Tufte provides some useful design guidelines for adjusting the size of spark lines to maximize readability.

Solution:

(a) Screen Reader is a general term for programs that help blind people use computers. Simply, screen readers "read" (say) page content to blind users

(b) Screen reader is a software program that allows blind or visually impaired users to read text displayed on a computer screen using a speech synthesizer or Braille display. Screen reader is the interface between computer operating system, application program and user. So screen readers are often used by blind people.

(c) On the concert ticket website, when a blind user wants to choose the concert he wants to listen to, he needs to turn on the screen reader, which will output the voice of the list of concert programs. Users can use voice input to select the concert they want. Finally, confirm the choice and purchase concert tickets.