Effect of Change of Concentration on Chemical Equilibrium

It is a common observation that many physical processes and chemical reactions exist in the state of equilibrium. Our focus being on chemical reactions, the answer to question as to why many chemical reactions do not proceed to completion is that after sometime the rates of forward reaction and backward reaction balance each other. This is the state of chemical equilibrium. Applying law of mass action to a reversible reaction,

equilibrium constant K for the reaction may be written as

$$K = \frac{[C][D]}{[A][B]}$$

where concentration brackets represent molar concentrations of reactants and products,
It is quite clear from the expression (7.1) that if we increase the concentration of reactants i.e., A or B or both, the value of of concentration quotient no longer remains equal to K and the system no longer remains in a state of equilibrium. In order to attain the state of equilibrium again, the concentrations of C and D will increase and the equilibrium shifts in the forward direction. Similarly, if we increase the concentration of the products, either C or D or both, the equilibrium shifts in the backward direction.
The effect of concentration on a system in equilibrium can be predicted with the help of , Le-Chatelier's Principle which states that

If a system in equilibrium is subjected to change of concentration, pressure or temperature, the equilibrium shifts in the direction that tends to undo the effect of the change.
According to Le-Chatelier's principle, when the concentration of one of the substances in , a system at equilibrium is increased, then the equilibrium will shift so as to use up the substance added. Suppose at equilibrium one of the reactants is added, the equilibrium will shift in the direction that consumes reactants, i.e., the forward direction. The more of the reactants would be converted into products. On the other hand, if one of the products is added the equilibrium will shift in the backward direction because it consumes the products.