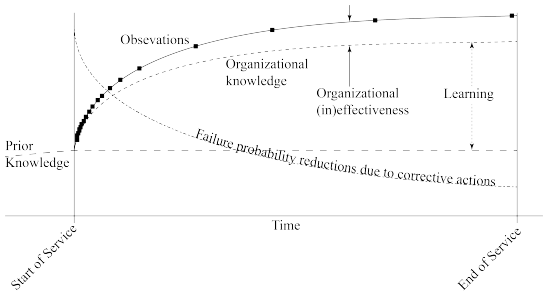
The Essential Role of Clairvoyance in Loss Prevention



When engineers are faced with designing protections in a hazardous technological system, they think through scenarios that may lead to loss. Such scenarios are based on their understanding of breakdowns that have become known to them through testing, analysis, root cause determinations of in-service failures, and other observations known by them. Engineers consider breakdowns in protection that result in loss of a "critical function" or so-called "functional failures". Examples would be a bridge collapse, collisions in rail transportation, chemical process plant explosions and fires, uncontrolled release of toxins to the environment, and so forth.

If all potential protection breakdowns are known about prior to a design commissioning, engineers can design protections that can be relied upon with great confidence. A non-consequential example is automobile warranties whereby the customer bears no loss for repair if a failure occurs under the warranty period. In this case, the automobile manufacturer can, for example, require lifetime testing under the designed use conditions for functional failure(s) of supplied commodities. Knowing the failure probability for each functional failure in, for example, the drivetrain, allows the manufacturer to know the probability and associated costs for each functional failure over a finite time horizon. Therefore, armed with such information, the manufacturer can know the warranty exposure for a fleet of automobiles with good confidence.