

Assignment 2

Instructions and guidelines

- You will need the file [RiskManagement.xls](#) to complete this assignment. It is available on the course web site.
- This assignment asks you to perform risk management using a simple financial analysis of the returns from different security technologies, using Microsoft Excel, and to make recommendations based on your analysis.
- You may consult with your team members, but submit your own version of the solution.
- I suggest that you read the assignment fully before starting your work.

Deliverable: Upload of completed Excel file *your_lastnameRiskManagement.xls*.

This assignment asks you to analyze the risk management controls that should be implemented by XYZ Software Corporation. You have been provided with an Excel workbook called [RiskManagement.xls](#). Start by downloading this workbook to your hard drive or network drive and saving it under the name *your_lastnameRiskManagement.xls*. For instance, if your last name is **Smith**, save the workbook under the name **SmithRiskManagement.xls**.

As discussed in class, several threats to information exist in an organization. In this analysis, we are considering eight of them (see column A). The cost to XYZ Corporation for the occurrence of each incident is given in column B, and the expected frequency of occurrence is given in column C.

- a) Convert the incident frequency in column C to annual basis, and enter the value (as a number) in column D, called annual rate of occurrence (ARO). For instance, if the frequency is once in 6 months, annual rate of occurrence will be 2.
- b) Calculate the annual loss expectancy (ALE) in column E as

Annual loss expectancy = cost per incident * annual rate of occurrence

Enter the appropriate formula in cells of column E.

Now the firm is considering the implementation of four different controls --- Training, Firewall/IDS, Physical and Anti-virus controls (indicated in Column F) --- to reduce the loss from these threats. A control may reduce more than one threat, and that is why some controls appear more than once in column F. If the control is implemented, the frequency of incident happenings will be reduced. For instance, with Training control, programmer mistake incidents go down to once a month from once a week. The reduced incident frequency with the control is indicated in column G. The annual cost (AC) of each of these controls (for that threat) is indicated in column H. You have to calculate the annual saving from implementing the control, subtract its annual cost, and arrive at the annual net benefit.

- c) In column I, enter the annual rate of occurrence converting the frequency values in Column G to an annual basis. This step is similar to what you did in step (a).

- d) In column J, enter the formula for annual loss expectancy as (similar to step (b))

New Annual loss expectancy = cost per incident * New annual rate of occurrence

- e) In column K, enter the formula for annual benefits (AB) from control as

Annual Benefits from control = Annual Loss Expectancy - New Annual loss expectancy

- f) In Column L, enter the formula for calculating Annual Net Benefit as

Annual Net Benefit = Annual Benefit from control – Annual Cost of control

- g) In the summary part of the spreadsheet (in yellow color), in cells G17:G20, enter the appropriate formula for Total Annual Net Benefit for a control by summing up the appropriate Annual Net Benefit cells from column L for that particular control. For instance, the formula in G17 will be

=L5 + L7

You need to find the correct formula for the other cells G18:G20. Please note that you cannot simply copy the formula from G17 to the other cells.

- h) Finally, indicate your recommendation about whether the control should be implemented or not in cells H17:H20 with a “Yes” or “No” answer. Clearly, if the Total Annual Net Benefit exceeds zero, that control must be implemented.

- i) (Optional) --- For part (h), can you think of entering a formula in cells H17:H20 using IF function that will appropriately indicate Yes or No?

Save your work. You have now successfully completed the assignment, and can submit it using Sakai.