**Part 1: Cost Benefit Analysis**

1. **Scenario A: Onsite**
   1. **Project Costs and Benefits:**

Amount in ($)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Description | Nature | Cost | | Benefits | |
| **One Time** | **Recurring** | **One Time** | **Recurring** |
| Hardware purchase | One Time Cost | 150,000 | - | - | - |
| Yearly license fee | Recurring Cost | - | 50,000 | - | - |
| Installation expense | One Time Cost | 30,000 | - | - | - |
| Consultancy expenses | One Time  Cost | 20,000 | - | - | - |
| Miscellaneous maintenance expense | Recurring  Cost | - | 10,000 | - | - |
| Savings from salary expenses | Recurring  Benefits | - | - | - | 150,000 |
| Saving from carrying cost | Recurring  Benefits | - | - | - | 1,000,000 |
| Increased revenue | Recurring  Benefits | - | - | - | 3,000,000 |

Here, cost and benefits are categorized based on their nature irrespective of the project life. Therefore, all the costs and benefits are not aggregated since that may be misleading without considering the project life.

* 1. **Project Costs for 3/5/7 Years:**

Amount in ($)

|  |  |  |  |
| --- | --- | --- | --- |
| Description | Project Life (Years) | | |
| **3** | **5** | **7** |
| Hardware purchase (One time cost) | 150,000 | 150,000 | 150,000 |
| Yearly license fee  (50,000 x 3; 50,000 x 5; 50,000 x 7) | 150,000 | 250,000 | 350,000 |
| Installation expense (One time cost) | 30,000 | 30,000 | 30,000 |
| Consultancy expenses (One time cost) | 20,000 | 20,000 | 20,000 |
| Miscellaneous maintenance expense  (10,000 x 3; 10,000 x 5; 10,000 x 7) | 30,000 | 50,000 | 70,000 |
| Total Cost over Project Life | **380,000** | **500,000** | **620,000** |

* 1. **Project Benefits for 3/5/7 Years:**

Amount in ($)

|  |  |  |  |
| --- | --- | --- | --- |
| Description | Project Life (Years) | | |
| **3** | **5** | **7** |
| Savings from salary expenses  (150,000 x 3; 150,000 x 5; 150,000 x 7) | 450,000 | 750,000 | 1,050,000 |
| Saving from carrying cost  (1,000,000 x 3; 1,000,000 x 5; 1,000,000 x 7) | 3,000,000 | 5,000,000 | 7,000,000 |
| Increased revenue  (3,000,000 x 3; 3,000,000 x 5; 3,000,000 x 7) | 9,000,000 | 15,000,000 | 35,000,000 |
| Total Benefits over Project Life | **12,450,000** | **20,750,000** | **43,050,000** |

* 1. **Comparison of Project Cost and Benefits for 3/5/7 Years:**

Amount in ($)

|  |  |  |  |
| --- | --- | --- | --- |
| Cost and Benefits | Project Life (Years) | | |
| **3** | **5** | **7** |
| Total Cost over Project Life (a) | 380,000 | 500,000 | 620,000 |
| Total Benefits over Project Life (b) | 12,450,000 | 20,750,000 | 43,050,000 |
| Net Benefits over Costs (c) = (b) - (a) | **12,070,000** | **20,250,000** | **42,430,000** |

1. **Scenario B: Cloud**
2. **Project Costs and Benefits:**

Amount in ($)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Description | Nature | Cost | | Benefits | |
| **One Time** | **Recurring** | **One Time** | **Recurring** |
| Yearly user license fee (200 x 100 x 12) | Recurring Cost |  | 240,000 |  |  |
| Internet upgrade expense (1200 x 12) | Recurring Cost |  | 14,400 |  |  |
| Savings from less data centre space | Recurring  Benefits |  |  |  | 1,500,000 |
| Savings from salary expenses | Recurring  Benefits |  |  |  | 250,000 |
| Increased revenue | Recurring  Benefits |  |  |  | 2,750,000 |

Here, cost and benefits are categorized based on their nature irrespective of the project life. Therefore, all the costs and benefits are not aggregated since that may be misleading without considering the project life.

1. **Project Costs for 3/5/7 Years:**

Amount in ($)

|  |  |  |  |
| --- | --- | --- | --- |
| Description | Project Life (Years) | | |
| **3** | **5** | **7** |
| Yearly user license fee  (240,000 x 3; 240,000 x 5; 240,000 x 7) | 720,000 | 1,200,000 | 1,680,000 |
| Internet upgrade expense  (14,400 x 3; 14,400 x 5; 14,400 x 7) | 43,200 | 72,000 | 100,800 |
| Total Cost over Project Life | **763,200** | **1,272,000** | **1,780,000** |

1. **Project Benefits for 3/5/7 Years:**

Amount in ($)

|  |  |  |  |
| --- | --- | --- | --- |
| Description | Project Life (Years) | | |
| **3** | **5** | **7** |
| Savings from less data centre space (1,500,000 x 3; 1,500,000 x 5; 1,500,000 x 7) | 4,500,000 | 7,500,000 | 10,500,000 |
| Savings from salary expenses  (250,000 x 3; 250,000 x 5; 250,000 x 7) | 750,000 | 1,250,000 | 1,750,000 |
| Increased Revenue  (2,750,000 x 3; 2,750,000 x 5; 2,750,000 x 7) | 8,250,000 | 13,750,000 | 19,250,000 |
| Total Benefits over Project Life | **13,500,000** | **22,500,000** | **31,500,000** |

1. **Comparison of Project Cost and Benefits for 3/5/7 Years:**

Amount in ($)

|  |  |  |  |
| --- | --- | --- | --- |
| Cost and Benefits | Project Life (Years) | | |
| **3** | **5** | **7** |
| Total Cost over Project Life (a) | 763,200 | 1,272,000 | 1,780,000 |
| Total Benefits over Project Life (b) | 13,500,000 | 22,500,000 | 31,500,000 |
| Net Benefits over Costs (c) = (b) - (a) | **12,736,800** | **21,228,000** | **29,720,000** |

**Selection of Options for different Project Periods:**

Amount in ($)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Net Benefits over Project Life | | |
| **3** | **5** | **7** |
| Onsite | 12,070,000 | 20,250,000 | 42,430,000 |
| Cloud | 12,736,800 | 21,228,000 | 29,720,000 |
| Higher Net Benefit | **12,736,800** | **21,228,000** | **42,430,000** |
| Option to chose | **Cloud** | **Cloud** | **Onsite** |

The above table considers whether to choose onsite or cloud option for different project life scenarios. For project with 3 and 5 years of life, the cloud option provides more net benefit. As a result, scenario b, i.e, cloud option should be chosen instead of onsite option. In contrast, for project life with 7 years, onsite option provides higher net benefit and should be selected.