3.1.1 Tangible Costs

-Hardware

Category	Item	Price (RM)(Est.)	Quantity	Value (RM)
Hardware	Windows Server 2019	25,889.80	3	77,669.40
	Canon imageClass MF269dw (Printer)	1,903.50	10	19,035.00
	TP-LINK Archer VR400 AC1200 (Modem)	250.40	5	1,252.00
	D-Link Dub H7 7-Port HUB (Hub)	104.30	10	1,043.00
	Desktop Computer	3,372.30	115	387,814.50
	Sunlux XL-3200 2D Barcode Scanner (Barcode Scanner)	269.50	5	1,347.50
	Epson Perfection™ V39 Scanner (Scanner)	1,749.00	5	8,745.00
	PANASONIC KX-TS880 (Telephone)	229.50	15	3,442.50
Total				500,348.90

Hardware Explanation

Item	Details	Price
Windows Server 2019	Servers provide a secure method of storing data, manage multiple network services such as email, Internet connectivity, file sharing, printer sharing for the company.	RM25,889.80
Canon imageClass MF269dw (Printer)	Printers helps employees to produce paper required items such as reports, financial statements, etc.	RM1,903.50
TP-LINK Archer VR400 AC1200 (Modem)	A modem enables computers, to transfer data over the internet.	RM250.40
D-Link Dub H7 7-Port HUB (Hub)	A hubs connect the local computers to each other and to a variety of peripheral devices such as printers so it is easier for users to access data in the area of library.	RM104.30
Desktop Computer	Desktop computer allows library user to use the software of the computer and surf the internet to do their work. The price included peripheral of the computer.	RM3,372.30
Sunlux XL-3200 2D Barcode Scanner (Barcode Scanner)	Barcode scanner allows librarian to scan the codes of the books to store data of the books such as books borrowed, books returned, books addition.	RM269.50
Epson Perfection™ V39 Scanner (Scanner)	The scanner allows library user to scan the document or books into the computer and change it to digital form.	RM1,749.00
PANASONIC KX-TS880 (Telephone)	Telephone allows librarian to communicate with each other, other departments, offices.	RM229.50

-Software

Category	Item	Price(RM)(Est.)	Quantity	Value(RM)
Software	Microsoft Windows 10	500.95	115	57,609.25
	Avast Antivirus	221.45	115	25,466.75
	MS Office	416.40	115	47,886.00
	Windows Server 2019	4,057.13	3	12,171.39
	Lend-Items (Lend Books Software)	1,983.84	5	9,919.20
Total				153,052.59

Software Explanation

Item	Details	Price
Microsoft Windows 10	Microsoft Windows 10 is a operating system that is required for desktop computers to run. It is a one-time fee, so it does not require to pay extra fees after that.	RM500.95 per software
Avast Antivirus	Avast antivirus is required for the desktop computers to protect against virus that will harm the computer. It required subscription fees every year.	RM221.45 per year
MS Office	Microsoft Office includes Microsoft Word, Microsoft PowerPoint, Microsoft Excel, etc. that help the user to do work or assignment. It required subscription fees every year.	RM416.40 per year
Windows Server	Windows server is a operating system that is required for servers to run. It required subscription fees every year.	RM4,057.13 per year
Lend-Items (Lend Books Software)	Lend-Books Software is a software that allows the library to create catalog and keep track of all the lendings and reservations of books.	RM1,983.84 per year

-Installation cost

Category	Item	Price(RM)(Est.)	Quantity	Value(RM)
Installation cost	Electrical wiring	33,967.20	1	33,967.20
	Cabling	32.50	50	1,625.00
	Software Installation wages	7,526.00	1	7,526.00
	Hardware Installation wages	7,644.20	1	7,644.20
Total				50,762.40

Installation cost Explanation

Item	Details	Price
Electrical wiring	Electrical wiring is required to install the new system to connect electricity.	RM33,967.20 total for wires
Cabling	Cabling is required to connect the internet around the library for the new system.	RM32.50 per ethernet cable
Software Installation wages	Wages for workers who installs all the software	RM7,526 total
Hardware Installation wages	Wages for workers who installs all the hardware	RM7,644.20 total

-Operating cost

Category	Item	Price(RM)(Est.)	Quantity	Value(RM)
Operating cost	Maintenance of system	5,000.00	5	25,000.00
	Internet connectivity service	3,600.00	5	18,000.00
	Telephone services	3,720.00	5	18,600.00
Total				61,600.00

Operating cost Explanation

Item	Details	Price
Maintenance of system	The library needs to maintain and fix the system such as computers, printers, etc.	Average RM416.67 per month * 12 = RM5,000 per year
Internet connectivity service	The library needs internet connectivity service which is TM Internet to allows the library's devices and systems to connect to the internet.	RM600 per month * 12 == RM3,600 per year
Telephone services	Telephone services which is Maxix phoneline is required for the telephone in the library to work	RM310 per month * 12 == RM3,720 per year

-Development cost

Category	Item	Price(RM)(Est.)	Quantity	Value(RM)
Development cost	Fact-gathering	1,560.00	4	6,240.00
	Software Development	14,607.60	5	73,038.00
Total				79,278.00

Development cost Explanation

Item	Details	Price
Fact-gathering	It is the process used to gather facts of the library to improve the library's system overall quality.	Average RM130 per month * 12 = RM1,560 per year
Software Development	To research and develop the system of the library.	Average RM 1,217.30 per month * 12 = RM14,607.60 per year

-Personnel cost

Category	Item	Price(RM)(Est.)	Quantity	Value(RM)
Personnel cost	Salaries of technicians	1,500.00	20	30,000.00
	Training of employees	19,200.00	30	576,000.00
Total				606,000.00

Personnel Explanation

Item	Details	Price
Salaries of technicians	Salaries for technicians that install the new Library Management System.	Average RM1,500 per technician
Training of employees	Training of employees is necessary for employees to work efficiently as their position. The complete training provided by professional required fees which is around RM19,200 per employee.	Average RM19,200 per employee

Total

Category	Value (RM)
Hardware	500,348.90
Software	153,052.59
Installation cost	50,762.40
Operating cost	61,600.00
Development cost	79,278.00
Personnel cost	606,000.00
Total	1,451,041.89

3.1.2 Tangible Benefit Summary

Benefits	Unit Cost (RM)	Units	Cost (RM) per Month	Cost (RM) per Year
Eliminate Overtime	1,200.00	100	120,000.00	1,440,000.00
Eliminate Additional Position	4,000.00	60	240,000.00	2,880,000.00
Eliminate Daily Error	-	-	60,000	720,000.00
Total				5,040,000.00

Tangible Benefit	Description
Eliminate Overtime	The use of new LMS can do more so that the staff can finish their job in time and prevent overtime.
Eliminate Additional Position	Additional positions such as the counter staff, book recorder, statistician, and some other staff are no longer needed due to the automation of the system.
Eliminate Daily Error	Daily errors such as typing errors, miscalculation, book arranged wrongly, registration form validation may cause the library to have more loss.

3.2 Cost Benefit Summary

	YEAR 0 (RM)	YEAR 1 (RM)	YEAR 2 (RM)	YEAR 3 (RM)	YEAR 4 (RM)
Costs:					
Hardware	500,348.90	0	0	0	0
Software	153,052.59	95,416.34	95,416.34	95,416.34	95,416.34
Installation cost	50,762.40	0	0	0	0
Operating cost	61,600.00	61,600.00	61,600.00	61,600.00	61,600.00
Development cost	79,278.00	79,278.00	79,278.00	79,278.00	79,278.00
Personnel cost	606,000.00	0	0	0	0
Total Costs	1,451,041.89	236,294.34	236,294.34	236,294.34	236,294.34
Benefits:					
Eliminate Overtime	1,440,000.00	1,440,000.00	1,440,000.00	1,440,000.00	1,440,000.00
Eliminate Additional Position	2,880,000.00	2,880,000.00	2,880,000.00	2,880,000.00	2,880,000.00
Eliminate Daily Error	720,000.00	720,000.00	720,000.00	720,000.00	720,000.00
Total Benefits	5,040,000.00	5,040,000.00	5,040,000.00	5,040,000.00	5,040,000.00

3.3 Intangible Benefits

Greater Reliability and Security

-Barcode System use in Library Management System it can protect all the library's assets. For example, some library member lost the library's book they cannot shirk responsibility this is because librarian can check it, by scanning the barcode on their library card. Not only that, we barcode system also can avoid fraudulent library card. When scanning the barcode on library card we can know the user information like user photo, user name, borrow history and sold on.

Improve Library Image

-Barcode system will be faster than our old manual system (chop system), hence this will help us improve our library image as well as assuring the quality services provided to our readers and attract more readers come to our library.

Improve Librarian Morale

-When using barcode system, it can speed up the librarian to get the job done such as arrange the book in library and make the report or speed up the borrowing system it will not let the library administrator continue to face the same and repeated work and feel bored. It can improve the productivity of librarian indirect also allows librarians to feel their work efficiency and rise up the librarian morale.