Case Study 5

Maple City Mobile Payment Portal

Maple City is in need of an online payment system. The city government has started a project to create a mobile portal for payments. The city's citizens will use this portal to make payments toward recurring costs for water, sewer, and rent for public housing. It will also allow citizens to pay one-time charges for parking tickets and other city code enforcement items or services. The mayor, Li Patel, is concerned that the project may take longer than expected and cost more than the allotted budget.

This project integrates three main billing systems into the new payment portal. Each of the three systems needs to be upgraded so integration with the new system is possible. In the past, a citizen might update an address in the utility system, but then a parking ticket would still be mailed to an old address. Other times, a citizen would be owed a refund of a housing deposit upon moving out of an apartment but were unable to apply that refund to the payment of a final utility bill because the systems did not communicate.

The original labor budget for the project is $72,800, based on 1,456 budgeted hours at the standard IT department rate of $50/hr. Any necessary equipment will be paid for out of a state technology grant program whose funds are expiring this fiscal year.

The project started the first Monday of April, and the goal is to finish by the end of the city's fiscal year, which runs July 1–June 30. The IT director, Jack Kalani, holds a weekly project status meeting with the mayor on Wednesday mornings. The main focus of the third weekly meeting is both on bringing in a new project manager, who is taking over for the original project manager, and on reassuring the mayor that a plan is in place to complete the project successfully.

In preparation for the weekly meeting, each of the team leads has submitted a status report to the IT director, showing all work completed and money spent by the end of day 12.

Teams	Completed Tasks
Oliver Sousa System Requirements and Design	1.1 Billing department user interviews - day 3 1.2 Functional requirements document - day 5 1.3 Determine technology needs - day 7 1.4 Establish testing plan - day 8
Talia Williams Water, Sewer, Garbage Collection	2.1 Create database tables - day 10 2.2 Data cleanup and import - day 12
Anika Costa Parking and Code Enforcement	3.1 GIS system integration - day 11 3.2 Mobile device procurement - day 12
Hannah Lee Public Housing Rent	4.1 Create database tables - day 12
Kamal Kim Payment Processing	

Work Breakdown Structure

The following work breakdown structure (WBS) shows the tasks required to complete the project along with duration estimates and task predecessors. Tasks may be assigned to a single individual or multiple individuals.

Line #	WBS #	Phases/Tasks	Days	Predecessors
1	**1.0**	**System Requirements and Design**		
2	1.1	Billing department user interviews	2	
3	1.2	Functional requirements document	2	1.1
4	1.3	Determine technology needs	3	1.1
5	1.4	Establish testing plan	1	1.2, 1.3
6	1.5	Establish implementation plan	1	1.4
7	**2.0**	**Water, Sewer, Garbage Collection**		
8	2.1	Create database tables	5	1.3
9	2.2	Data cleanup and import	5	2.1
10	2.3	Customization of utility module	10	2.1
11	2.4	Integration with water meter system	4	2.2, 2.3
12	2.5	Testing	2	2.4
13	**3.0**	**Parking and Code Enforcement**		
14	3.1	GIS system integration	4	1.3
15	3.2	Mobile device procurement	6	1.3
16	3.3	Customization of ticketing module	10	3.1, 3.2
17	3.4	Testing	3	3.3
18	3.5	Hiring and training	10	3.4
19	**4.0**	**Public Housing Rent**		
20	4.1	Create database tables	5	1.3
21	4.2	Data cleanup and import	5	4.1
22	4.3	Customization of property module	15	1.3
23	4.4	Maintenance request log development	15	1.3
24	4.5	Testing	2	4.2, 4.3, 4.4
25	**5.0**	**Payment Processing**		
26	5.1	Ad hoc service billing development	22	1.3
27	5.2	Integration with billing systems	10	2.5, 3.5, 4.5, 5.1
28	5.3	Establish merchant account	2	1.5, 5.2
29	5.4	Set up EFT gateway	3	5.3
30	5.5	Training billing specialists	5	5.4

Status Reports

Oliver Sousa

	Budget		% Complete	Expenditures	
	Hours	Dollars		Hours	Dollars
System Requirements and Design	**72**	**$3,600.00**	**94%**	**78**	**$3,900.00**
Billing department user interviews	16	$800.00	100%	20	$1,000.00
Functional requirements document	16	$800.00	100%	19	$950.00
Determine technology needs	24	$1,200.00	100%	23	$1,150.00
Establish testing plan	8	$400.00	100%	9	$450.00
Establish implementation plan	8	$400.00	50%	7	$350.00

Notes:
Our work is mostly completed. We have done everything except for finalize some lingering details of the communication plan. Once the system is in place and running, citizens will need to log in using a temporary code in order to set up their account and activate the app. We have been waiting to hear whether we have enough email addresses to send the codes out electronically or if it would be better to include a paper insert in the July utility bills. It seems that either way we will miss some people.

Talia Williams

	Budget		% Complete	Expenditures	
	Hours	Dollars		Hours	Dollars
Water, Sewer, Garbage Collection	**288**	**$14,400.00**	**57%**	**188**	**$9,400.00**
Create database tables	40	$2,000.00	100%	45	$2,250.00
Data cleanup and import	40	$2,000.00	100%	50	$2,500.00
Customization of utility module	160	$8,000.00	53%	93	$4,650.00
Integration with water meter system	32	$1,600.00	0%	0	-
Testing	16	$800.00	0%	0	-

Notes:
The database is functioning, and our quality audits show that everything matches with our legacy system. As we discussed the status of the database in our last team meeting, someone had the question of what happens if anyone moves, starts service, or stops service between now and when the system goes live. Do we have an estimate of how many service changes usually happen each month? Depending on how many we usually have, we will develop a recommendation for keeping the databases synchronized until we go live on July 1.

Anika Costa

	Budget		% Complete	Expenditures	
	Hours	Dollars		Hours	Dollars
Parking and Code Enforcement	**384**	**$19,200.00**	**22%**	**114**	**$ 5,700.00**
GIS system integration	32	$1,600.00	100%	40	$2,000.00
Mobile device procurement	48	$2,400.00	100%	50	$2,500.00
Customization of ticketing module	200	$10,000.00	3%	24	$1,200.00
Testing	24	$1,200.00	0%	0	-
Hiring and training	80	$4,000.00	0%	0	-

Notes:
We were able to obtain all the mobile scanners and ticket printing hardware. The grant system made it really easy to purchase those. Any additional hardware we might require after July 1 will have to be covered by the city budget though since the technology upgrade grant is ending on June 30. So far, we have spent most of our time figuring out the hardware features, so we have not gotten very deep into the actual coding yet. It seems to have some useful tools, especially the built-in camera that code-enforcement officers can use to document violations with, which is something our officers have never had before.

Hannah Lee

	Budget		% Complete	Expenditures	
	Hours	Dollars		Hours	Dollars
Public Housing Rent	**336**	**$16,800.00**	**26%**	**66**	**$3,300.00**
Create database tables	40	$2,000.00	100%	41	$2,050.00
Data cleanup and import	40	$2,000.00	4%	6	$300.00
Customization of property module	120	$6,000.00	18%	10	$500.00
Maintenance request log development	120	$6,000.00	21%	9	$450.00
Testing	16	$800.00	0%	0	-

Notes:
It appears we have all the data we need to be compliant with the Department of Housing and Urban Development (HUD) requirements for supplemental housing assistance. Not all residents of the public housing units have their agreements on file. We are working on making a list of residents who either need a new eligibility form completed or who just need to have their form scanned and attached to their account. The new system will be a lot easier for the office staff since it will be completed electronically. The system will not issue resident key cards if anything is out of order, so we have a sort of forced compliance moving forward. We have decided to keep the existing maintenance requests in the current paper filing system for maintenance staff to work through, and only new requests will show up in the new request system. We simply do not have the data entry personnel available to digitize the existing requests.

Kamal Kim

	Budget		% Complete	Expenditures	
	Hours	Dollars		Hours	Dollars
Payment Processing	**376**	**$18,800.00**	**13%**	**79**	**$3,950.00**
Ad hoc service billing development	176	$8,800.00	27%	79	$3,950.00
Integration with billing systems	80	$4,000.00	0%		-
Establish merchant account	16	$800.00	0%		-
Set up EFT gateway	24	$1,200.00	0%		-
Training billing specialists	80	$4,000.00	0%		-

Notes:
During our last community council meeting, the suggestion was made to have another form of payment, such as PayPal or Venmo. Li Patel was at that meeting and promised that we would do everything we could to make more payment types available. We have not yet started working on that part of the project, but that will take some time to research the necessary APIs and other requirements before we can decide which service to go with. Is this something that is really necessary to have right now, or can we add this as a feature later?