

Maine Quality Choices  
Integrated Data Application  
Development Requirements

Enter Scenario Selection:

**1** Minimum Implementation

Component Requirements	Phase / Ph. Totals	UI/ Module	Queries / Reports	Workflow / Processes	Classes - Simple	Classes - Medium	Classes - Complex	Adapters	Package Interfaces	Package Integration	Complex Package	DB Entities / components	Comments/Key Assumptions
Scenario 1 - Minimum Implementation:	96	7	6	15	4	4	5	3	20	5	2	25	
Scenario 2 - Incremental for Full Implementation:	193	13	46	63	6	14	18	6	16	3	0	8	
Totals for selection - Scenario 1:	96	7	6	15	4	4	5	3	20	5	2	25	
High Level Architectural Overview	1												
IDA LOGICAL ARCHITECTURE (Scenario 1)	1	5							20	4	2	4	Guess-timate general purpose admin infrastructure GUI. Guess-timate the DBMS specific adapters for a pilot (X 2 for pbu/sub). Counting the COTS component integrations - EAI & ETL package integrations are considered complex. Counting representation of data categories as views or partitions.
IDA LOGICAL ARCHITECTURE (Scenario 2)	2							6	16	3		2	
IDA ARCHITECTURAL ELEMENTS	1			7								7	Counting the high level processes to reflect generic workflow services. Counting data objects as views or partitions. Classes are counted below.
SYSTEM-WIDE ARCHITECTURAL PRINCIPALS	1												
IDA Component Classes	1												"Simple" is assumed to be a wrapper for services from COTS components or non-IDA specific requirements, "Complex" classes combine IDA specific with multi function with multiple COTS integration requirements
IDA CORE DATA	1					1						7	
MEMORANDUM OF UNDERSTANDING (MOU)	1						1					7	
DATA SOURCE INTERFACE	1				1			2					Two data sources for phase 1
SUBSCRIBER INTERFACE	1						1	1					One subscriber adapter for phase 1
AGGREGATION - Scenario 1	1												
AGGREGATION - Scenario 2	2						1					2	
SCHEDULING AND WORKFLOW - Scenario 1	1												
SCHEDULING AND WORKFLOW - Scenario 2	2				1		1					2	
GUI - Scenario 1	1												
GUI - Scenario 2	2						1						
SECURITY	1				1					1			
STORAGE MANAGEMENT (STORAGE, STAGING, DELIVERY) - Scenario 1	1												
STORAGE MANAGEMENT (STORAGE, STAGING, DELIVERY) - Scenario 2	2				0	3						1	
DYNAMIC TRANSFORMATION - Scenario 1	1												
DYNAMIC TRANSFORMATION - Scenario 2	2					1						1	
CONSOLIDATION, DE-DUPLICATION AND CLEANSING	1				1	1	1						
DOCUMENT MANAGEMENT - Scenario 1	1												
DOCUMENT MANAGEMENT - Scenario 2	2					1							
INFRASTRUCTURE MONITORING AND MANAGEMENT - Scenario 1	1												
INFRASTRUCTURE MONITORING AND MANAGEMENT - Scenario 2	2					2							

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Component Requirements	Phase / Ph. Totals	U/I Module	Queries / Reports	Workflow / Processes	Classes - Simple	Classes - Medium	Classes - Complex	Adapters	Package Interfaces	Package Integration	Complex Package	DB Entities / components	
Functional Requirements													Comments/Key Assumptions
End-User Process Flows	1												If "GUI" is associated, then assume an average number of required screens. Assume queries/reports in proportion to process steps. Count each step as a workflow / process as a rough gauge of complexity. Characterize key technical challenges by recounting indicated "critical class" to reflect the specialized integration requirement.
REGISTRATION OF DATA SOURCES TO BE PUBLISHED - Scenario 1	1	1	2	2	1	1	1						
REGISTRATION OF DATA SOURCES TO BE PUBLISHED - Scenario 2	2	2	6	7	1	2	1						
ADMINISTRATION OF MOU AND ASSOCIATED RULES - Scenario 1	1	1	4	6		1	1						
ADMINISTRATION OF MOU AND ASSOCIATED RULES - Scenario 2	2	2	8	8		2	3						
ADMINISTRATION OF RELEVANT DOCUMENTATION AND GUIDELINES - Scenario 1	1												
ADMINISTRATION OF RELEVANT DOCUMENTATION AND GUIDELINES - Scenario 2	2	3	5	8		1	2						
MODIFY AND USE AN EXISTING APPLICATION TO PARTICIPATE IN IDA - Scenario 1	1												
MODIFY AND USE AN EXISTING APPLICATION TO PARTICIPATE IN IDA - Scenario 2	2	3	10	14	1		4						
DELIVERY AND FULFILLMENT OF DATA FOR BI OR APPLICATION - Scenario 1	1												
DELIVERY AND FULFILLMENT OF DATA FOR BI OR APPLICATION - Scenario 2	2		12	18	3	2	5						
CLIENT INDEX MAINTENANCE - Scenario 1	1												
CLIENT INDEX MAINTENANCE - Scenario 2	2	3	5	8									
IDA Preliminary Data Model	n/a												Entities / components are counted above.

Development Estimation Worksheet

Scenario 1 - Minimum Implementation

Duration: 22 weeks                      Start:      Mon 3/3/03      Budget:      \$1.75 M  
 Total Work Effort: 1,223 days      Finish:      Tue 8/5/03      Daily rate:      \$1,428

Comments/Key Assumptions

1. BASELINE DEVELOPMENT LEVEL OF EFFORT CALCULATION

A. COUNTS & METRICS

Integrated Data Application Implementation Requirements	Component Count (from Overview)	Development Metrics (days)	LOE (days)
UI Module	7	2.0	14
Queries / Reports	6	2.0	12
Workflow / Processes	15	1.0	15
Classes - Simple	4	1.0	4
Classes - Medium	4	2.0	8
Classes - Complex	5	4.0	20
Adapters	3	3.0	9
Package Interfaces	20	2.0	40
Package Integration	5	5.0	25
Complex Package	2	15.0	30
DB Entities / components	25	1.0	25
<b>Subtotal - Developer Staff Days:</b>			<b>202</b>

% LOE

7%  
6%  
7%  
2%  
4%  
10%  
4%  
20%  
12%  
15%  
12%  
100%

This estimate worksheet does not include hardware and software procurement budgets

Metrics **exclude** requirements definition and business and technical design, and **include** detailed unit implementation design, design review and iteration, coding/integration, code/integration review and iteration, unit testing, unit debugging, module integration testing, module debugging & build acceptance

Process counts are counted at granular level on the [Requirements] tab, so average metric is reduced  
 Note that the counts for classes is duplicated in the current approach on the [Requirements] tab so the average metric is reduced

B. RISK AND ASSUMPTION ADJUSTMENTS

Quantify the uncertainty of key risks:

CO IS/custom integration complexity  
 ???

Allocation	10%
Staff days	20

Quantify key assumptions:

User, technical, and administrative documentation  
 ???

Allocation	15%
Staff days	30

<b>Adjusted Subtotal Developer Staff Days</b>	<b>253</b>
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C. IN-LINE & SEQUENTIAL ACTIVITY CALCULATION

In-line activities that augment heads-down development efforts, as a percent of development effort, such as:

Sick/Vacation/Holiday (assume 10% of total LOE)  
 Progress checkpoints, road shows, focus group sessions  
 Project, technical, and code reviews  
 Builds, build process and build testing  
 System Optimization/Performance Tuning  
 Technical documentation & other deliverables

Allocation	10%
Staff days	25

Sequential, or dependent, activities that must be completed before or after core development activities, such as:

Additional scoping sessions  
 Development & test environment setup  
 Development ramp / training  
 Coding, documentation, & other process standards  
 Developing regression test cases  
 Integration Testing & Performance Tuning (incl builds)  
 Pilot & production environment setup  
 User training, Online Help & User Documentation QA  
 Team days

Allocation	10%
Staff days	25

<b>Baseline Total Implementation Level of Effort (Days):</b>	<b>303</b>
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It is useful to keep these categories separate for later planning purposes

Development Estimation Worksheet

Scenario 1 - Minimum Implementation

2. DURATION & CORE IMPLEMENTATION STAFFING CALCULATION

Scenario:  Minimum Implementation Phase 1

Draft Organizational Allocation	Counts	LOE Adj'd for in-line & seq activities	Staff	Duration (days)
UI/ Module	7	21	1.0	21
Queries / Reports	6	18	1.0	18
Workflow / Processes	15	23	1.0	23
Classes - Simple	4	6	0.5	12
Classes - Medium	4	12	0.5	24
Classes - Complex	5	30	1.0	30
Adapters	3	14	2.0	7
Package Interfaces	20	60	2.0	30
Package Integration	5	38	2.0	19
Complex Package	2	45	2.0	23
DB Entities / components	25	38	2.0	19
<b>Subtotals:</b>		303	15	30
<b>Adjustment for parallel allocations:</b>		147	(4)	
<b>Adjusted core implementation team staff count:</b>			11	

Comments/Key Assumptions

Manually enter staff allocations to "best fit" the duration days - note that an automatic adjustment is done below to reallocate staff for parallel opportunities

This calculation assumes staff can shift to other tracks to make up slack created when one track finishes earlier than another

3. SUPPORTING STAFF CALCULATION

Other Resources	Number	% Time	Resource Allocation	Total Days
Arch	1	100%	1.0	30
PM	1	100%	1.0	30
APM / QA Lead / Trainer	1	100%	1.0	30
Infrastructure specialist	1	50%	0.5	15
Database specialist	1	100%	1.0	30
Subject Matter Expert	0	100%	-	-
Director of PM	1	50%	0.5	15
Director Of Arch	1	100%	1.0	30
Business Lead / VP	1	20%	0.2	6
<b>Subtotal - Other Staff Days:</b>			6.2	186

4. TOP DOWN TOTAL PROJECT PHASE CALCULATION

Total Development Phase Staff Days:	489
Total Development Team Size:	17
Baseline Development Phase Duration (weeks):	6

Phase	Allocation to Total	Person Days	Average FTE	Duration (weeks)
Requirements Definition	5%	61	6	2
Business & Technical Design	25%	306	10	6
Integration & Development	40%	489	17	6
Quality Assurance	25%	306	10	6
Cutover & Pilot	5%	61	8	2
<b>Total:</b>	100%	1,223	11	22

This project is patterned for hybrid package/custom implementation

A package implementation assumption puts weight on integration phase, less on design and QA

Development values set baseline for other phases

TRUE

Maine Quality Choices  
Integrated Data Application  
Oversight Staffing

Scenario selected: 1 Minimum Implementation

Staff Category	Phase / Ph. Totals	Steering Committee	Project Management	Project Staff	Technical Consultant	Comments/Key Assumptions	
<b>Staffing Commitment (FTE)</b>	<b>Scenario 1 - Minimum State FTE Staffing</b>	10.0	4.7	1.0	3.2		1.1
	<b>Scenario 2 - Incremental FTE for Full Implementation:</b>	13.6	4.0	-	8.5		1.1
	<b>Totals for Minimum Implementation:</b>	10.0	4.7	1.0	3.2		1.1
	<b>Operational Activities FTE Count:</b>	5.5	1.0	1.0	3.0		0.5
<b>Steering Committee</b>							
The Steering Committee will be responsible for the overall direction of the project. Committee responsibilities will include procurement, oversight, final system acceptance, and issue escalation and decision-making							
The Committee will consist of the following members:							
· Executive	1	0.1					
· Sponsoring department	1	2.5			0.2		
· Pilot integration department(s) - Scenario 1	1	1.0					
· Incremental pilot integration department(s) - Scenario 2	2	4.0					
· State technical services representation - Scenario 1	1	0.4					
· Incremental State technical services representation - Scenario 2	1	0.8					
<b>Project Management</b>							
The project manager will be responsible for direction of all project staff and contractors, contract administration, monitoring adherence to schedule and budget, coordination of the interaction between contractors, State staff, and Federal oversight staff.							
Incremental PM & APM staff - Scenario 2:	2		1.0	1.0	0.5		
<b>DBA &amp; System Admin Staff</b>							
The Data Base Administrators and/or System Administrators of the publishing and subscribing data systems being integrated in each phase should have formal allocation of time to report to and coordinate integration efforts with the Project Manager							
Incremental DBA & Sys Admin staff - Scenario 2	2			3.0	0.3		

Maine Quality Choices  
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Oversight Staffing

Staff Category	Phase / Ph. Totals	Steering Committee	Project Management	Project Staff	Technical Consultant	Comments/Key Assumptions
<b>Staffing Commitment (FTE)</b>						
<b>Users / User Acceptance Testing</b>						
Allocation will be needed from members of the offices that will be piloting the solution, to review and approve deliverables throughout the project lifecycle, including being briefed on the progress of the vendor selection phase, and from requirements definition and design, through implementation (via progress checkpoints), and with a significant allocation in Q/A through rollout.	1			2.0	0.1	
Incremental Users / User Acceptance Testing staff - Scenario 2	2			4.0	0.2	
<b>Other State Staff</b>						
Other State staff will participate directly in the design and testing of the new system components. This staff will be assigned to ensure those requirements of program policy, operations, financial management and technical infrastructure are adequately represented in the design and construction of the new systems. Supplemental support from a consulting contractor may be committed at critical stages of the implementation	1			0.2	0.1	
Incremental Other State staff - Scenario 2	2			0.5	0.1	
<b>Operational Activities - Scenario 1</b>						
Content	3		0.5	0.5		
Registration	3			1.0		
Administration	3			0.5		
Oversight	3	1.0			0.5	
Infrastructure Maintenance & Operations	3		0.5			
Maintenance	3			0.5		
Operations	3			0.5		
<b>Operational Activities - Scenario 2 Incremental Staffing</b>						
Content	4		0.5	0.5		
Registration	4			2.0		
Administration	4			0.5		
Oversight	4	1.0			0.5	
Infrastructure Maintenance & Operations	4		0.5			
Maintenance	4			0.2		
Operations	4			0.2		

Maine Quality Choices  
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Hardware & Software

**Hardware & Software Costs**

<b>Hardware (including OS)</b>	<b>Pilot Specifications</b>	<b>Pilot Retail</b>	<b>Production Specifications</b>	<b>Production Retail</b>
Database Server	UNIX 4 X 900MH 10GB X 500GB (array)	\$150,000	2 X	\$300,000
EAI Server	UNIX 4 X 900MH 10GB X 50GB	\$100,000	2 X	\$200,000
ETL Server	UNIX 2 X 900MH 2GB X 100GB	\$30,000	3 X	\$90,000
Workflow Server	Wintel 2 X P4 2.6GH 2GB X 20GB	\$10,000	1 X	\$10,000
Application Server	Wintel 2 X P4 2.6GH 2GB X 50GB	\$15,000	2 X	\$30,000
Firewall / Routers / Switches		\$5,000	2 X	\$10,000
<b>Total</b>		<b>\$310,000</b>		<b>\$640,000</b>

<b>Software</b>	<b>Pilot Specifications</b>	<b>Pilot Retail</b>	<b>Production Specifications</b>	<b>Production Retail</b>
DBMS		\$50,000	4 X	\$200,000
EAI		\$50,000	4 X	\$125,000
ETL		\$50,000	4 X	\$125,000
Workflow/Scheduling		\$20,000	2 X	\$40,000
Application Server		\$20,000	2 X	\$40,000
Messaging		\$10,000	2 X	\$20,000
COTS Security		\$10,000	2 X	\$20,000
Document Management		\$10,000	2 X	\$20,000
Development/Office		\$10,000	2 X	\$20,000
<b>Total</b>		<b>\$230,000</b>		<b>\$610,000</b>

<b>Facilities / Data Center</b>	<b>Pilot Specifications</b>	<b>Pilot Retail</b>	<b>Production Specifications</b>	<b>Production Retail</b>
UPS / electrical		\$10,000	2 X	\$20,000
HVAC		\$2,500	2 X	\$5,000
Physical security		\$2,500	2 X	\$5,000
<b>Total</b>		<b>\$15,000</b>		<b>\$30,000</b>

<b>Totals</b>	<b>Expected Disc</b>	<b>Pilot Budget</b>	<b>Expected Disc</b>	<b>Production Budget</b>
Hardware Total	15%	\$263,500	33%	\$428,800
Software Total	15%	\$195,500	33%	\$408,700
Facilities Total	0%	\$15,000	0%	\$30,000
<b>Total</b>	round to 0	<b>\$474,000</b>		<b>\$867,500</b>

Totals for Link to Estimation Summary Minimum Implementation Round Totals to nearest 1,000 Annual Maintenance 12%	
<b>Totals</b>	
Hardware Total	\$264,000
Software Total	\$196,000
Facilities Total	\$15,000
<b>Total</b>	<b>\$475,000</b>
<b>Annual Hardware</b>	<b>\$32,000</b>
<b>Annual Software</b>	<b>\$24,000</b>

# Maine Quality Choices Integrated Data Application Estimate Summary

## Project Phase Summary and Related Costs Estimate

### Scenario 1 - Minimum Implementation

Start **Mon, 03-03-03**

Minimum Implementation (Vendor)	Blended Rate	Days	Team Size	Weeks	End
Requirements Definition		61	6	2	Tue, 03-18-03
Business & Technical Design		306	10	6	Tue, 04-29-03
Integration & Development		489	17	6	Tue, 06-10-03
Quality Assurance		306	10	6	Tue, 07-22-03
Cutover & Pilot		61	8	2	Tue, 08-05-03
<b>Totals:</b>	<b>1,428</b>	<b>1,223</b>	<b>11</b>	<b>22</b>	<b>\$1.7 M</b>

5.5 months

Implementation Activities (State)	Blended Rate	Days	Ave. Team	Weeks	End
Minimum Implementation	636	1,102	10	22	Wed, 08-04-04
<b>Totals:</b>		<b>1,102</b>		<b>22</b>	<b>\$0.7 M</b>

Operations, Maintenance & Support (Vendor)	Blended Rate	Days	Ave. Team	Weeks	End
Initial Term	1,400	393	2	52	Wed, 08-04-04
<b>Totals:</b>		<b>393</b>		<b>52</b>	<b>\$0.6 M</b>

Operations, Maintenance & Support (State)	Blended Rate	Days	Ave. Team	Weeks	End
Initial Term	636	1,310	5	52	Wed, 08-04-04
<b>Totals:</b>		<b>1,310</b>		<b>52</b>	<b>\$0.8 M</b>

Hardware, Software, Supplies & Expenses	Cost	Annual	Years	Total
Development/Test platform hardware	\$ 69,750	\$8,000	1.4	\$0.081 M
Production platform hardware	\$ 209,250	\$24,000	1.4	\$0.244 M
Licensed software	\$ 196,000	\$24,000	1.4	\$0.230 M
Supplies & expenses		\$80,000	1.4	\$0.114 M
<b>Total:</b>				<b>\$0.7 M</b>

**TOTAL ESTIMATED BUDGET: \$4.5 M**

## State & Federal Budget Allocation Estimate

State Medicaid Cost Allocation Breakdown Program	Total Expenditures SFY Ending 6/01	% of total
Medicaid	3,000,000	97.500%
BDS	19,230	0.625%
DOC	19,230	0.625%
DOE	19,230	0.625%
Labor	19,230	0.625%
<b>Total</b>	<b>3,076,920</b>	<b>100%</b>

Variance: +20%

Minimum Implementation Cost Summary:	Low	High
Vendor Development Costs	\$1.7 M	\$2.0 M
State Staff Development Costs	\$0.7 M	\$0.8 M
Vendor Operations Costs	\$0.5 M	\$0.6 M
State Staff Operations Costs	\$0.8 M	\$1.0 M
Total Labor Costs	\$3.7 M	\$4.5 M
Total Hardware, Software & Expenses	\$0.7 M	\$0.8 M
Total Project Estimate Costs	\$4.4 M	\$5.3 M
Total State Costs Net of Estimated FFP	\$0.8 M	\$1.0 M

### Fully Allocated State Staff Daily Cost:

Leadership		Staff		Consultant	
FTE	Rate	FTE	Rate	FTE	Rate
5.7	720	3.2	360	1.1	1,000

### Vendor Staff Daily Rate:

Scenario:	Leadership		Engineering	
	FTE	Rate	FTE	Rate
1	0.5	1,800	1	1,200
2	0.5	1,800	2	1,200

Leadership		Staff		Consultant	
FTE	Rate	FTE	Rate	FTE	Rate
2.0	720	3.0	360	0.5	1,000

75% Percentage allocation Production vs. Development

per diem: \$20 Total Days: 4,028

# Maine Quality Choices Integrated Data Application Estimate Summary

<b>Budget Summary</b>								
<b>Phase and Category Summary</b>								
Phase	Vendor Costs	CT Staff	HW/SW	Supplies	Total			
Implementaion & Operations Totals:	2.30	1.53	0.56	0.11	\$4.5 M			
<b>Totals:</b>	<b>\$2.3 M</b>	<b>\$1.5 M</b>	<b>\$0.6 M</b>	<b>\$0.1 M</b>	<b>\$4.5 M</b>			
<b>DSS Data Warehouse Medicaid cost allocation</b>								
						<b>Costs subject to FFP: \$4.4 M</b>		
Phase	Medicaid Allocated Development Costs				Medicaid Allocated Operational Costs			
	Vendor Costs	State Costs	HW	Supplies	Vendor Costs	State Costs	Hw/Sw	Supplies
Initial Term	\$1.70	\$0.68	\$0.08	\$0.06	\$0.54	\$0.81	\$0.46	\$0.05
<b>Totals:</b>	<b>\$1.70</b>	<b>\$0.68</b>	<b>\$0.08</b>	<b>\$0.06</b>	<b>\$0.54</b>	<b>\$0.81</b>	<b>\$0.46</b>	<b>\$0.05</b>
<small>Note: only dev HW qualifies for 90% FFP</small>				<small>Note: all SW in this column is Licensed</small>				
<b>CMS FFP Budget Projection</b>								
CMS Reimbursement %		90%		75%				
Phase	FFP Devel Costs	90% FFP Budget	FFP Ops Costs	75% FFP Budget	Total Reimb			
Initial Term	2.53	2.28	1.86	1.39	\$3.7 M			
<b>Totals:</b>	<b>2.53</b>	<b>\$2.3 M</b>	<b>1.86</b>	<b>\$1.4 M</b>	<b>\$3.7 M</b>			
<b>State Budget Projection</b>								
Phase	Vendor Costs	CT Staff	HW/SW	Supplies	Total			
Initial Term	0.36	0.31	0.14	0.02	\$0.8 M			
<b>Totals:</b>	<b>\$0.4 M</b>	<b>\$0.3 M</b>	<b>\$0.1 M</b>	<b>\$0.0 M</b>	<b>\$0.8 M</b>			
<b>TOTAL ESTIMATED BUDGET:</b>						<b>\$4.5 M</b>		

TRUE

Totals
\$4.39
\$4.39

TRUE

Totals
4.39
3.67

TRUE

TRUE

TRUE

TRUE