



Modern Continental – Business Assessment for Wireless Solutions

December 7, 2001



- **Introduction**
- Business Case
- Technical Overview

Isovia conducted a business and technical assessment for implementing a wireless-based solution for major reporting processes at Modern Continental

Objective

Determine whether Modern Continental should implement a wireless-based solution

Approach

- Analyzed current business processes
- Leveraged field test responses to demo
- Developed thoughts on necessary application capabilities
- Modeled savings from wireless solution
- Designed technical specifications

Team Members

Modern Continental

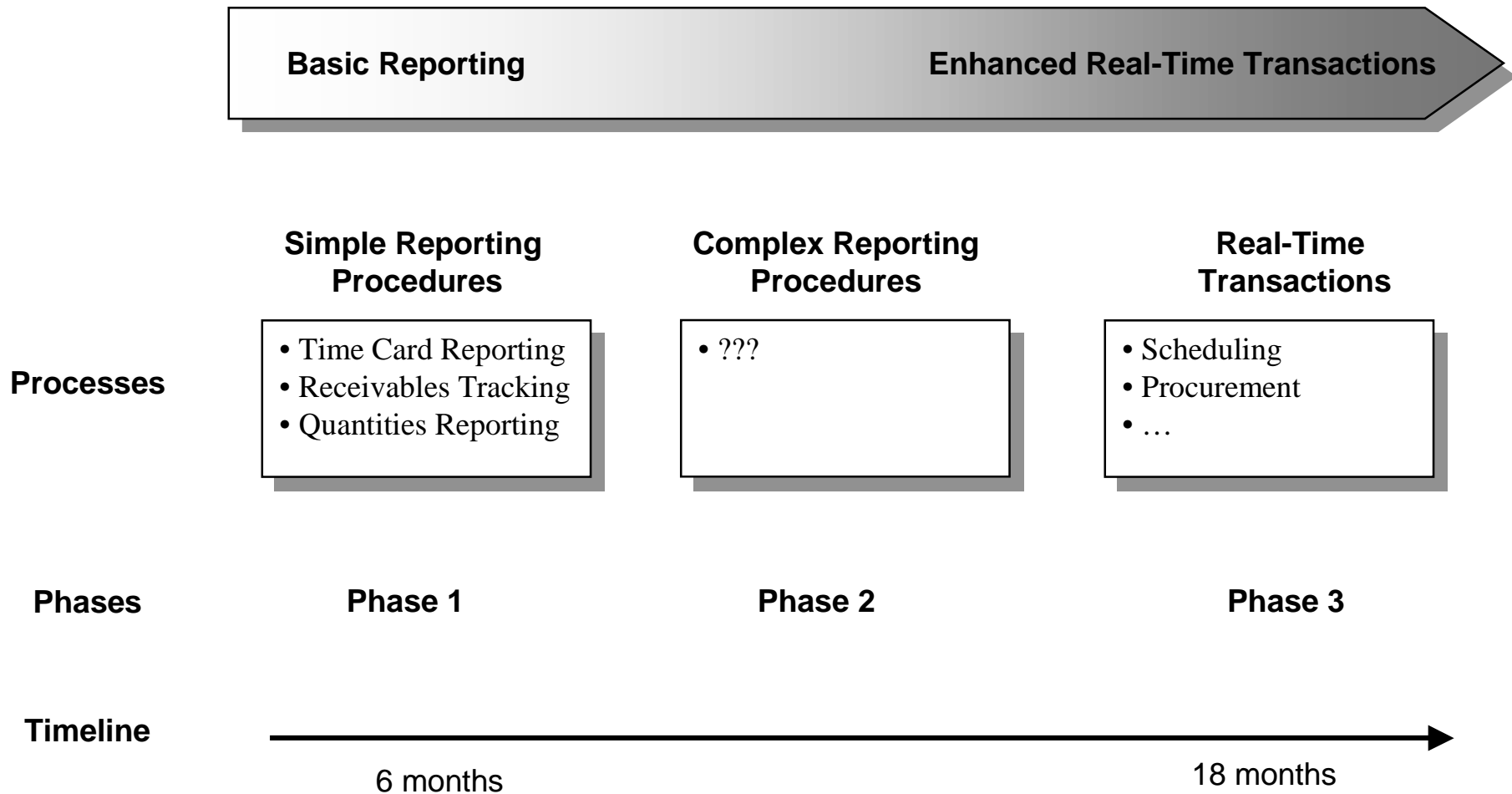
- John Doe, Vice President
- Jane Pauley, Software Systems Manager
- Jeff Bridges, Purchasing Manager

Isovia

- Manish Goyal, Technical Architect & Business Analyst
- Sanjay Kothari, Business Analyst
- Shan Sinha, Senior Engineer

- Introduction
- **Business Case**
 - **Application Savings**
 - Return on Investment
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Modern Continental could streamline and enhance a number of processes by leveraging wireless solutions



The reporting procedures are the “low-hanging fruit” most in need of streamlining because they are time-consuming, error-prone and costly

Reporting Procedures

Procedure	Purpose	Current Process	Problems
Time Card Reporting	Ensure timely and correct compensation for employees	1) Field Engineer creates time card 2) Foreman fills-out card 3) Foreman submits card to payroll clerk 4) Clerk enters data into CGC	- Time-consuming - Duplicate data entry - Manual time-card creation - Error-prone - Processing replacement checks - Over-payment
Receivables Tracking	Track material shipments	1) Purchasing coordinator initiates transaction 2) Paper receiving form distributed to Receiver 3) Receiver receives and keeps shipment receipt 4) Receiver fills out receiving form 5) Receiver submits receiving form and receipt to clerk 6) Clerk enters data into CGC	- Time lag - Errors - Lost receipts
Quantities Reporting	Track equipment usage	1) Cost Engineer creates cost-code manuals 2) Field Engineer reference manuals to fill-out tracking form 3) Field Engineer goes back to office to enter data into CGC	- Time-consuming

Interest Level ↑

For Time Card Reporting, Isovia's wireless solution will deliver anticipated savings of between \$1 - \$3mm annually, or \$5 - \$15mm over a 5-year period

Revised Time Card Reporting Process Benefits

Procedure	New Process	Advantages
Time Card Reporting	1) Foreman submits data directly to CGC via phone interface	<ul style="list-style-type: none"> - Foreman spends 30-40% less time entering data - Payroll clerks no longer have to re-enter data, which currently consumes 63-75% of their time - Can eliminate 15-21 hours/week that payroll clerks spend issuing replacement checks - Decrease over-payments



Time Card Reporting Line-Item Savings Annualized

Line Item Savings	Item	Unit	Range			Unit	Range		
			Low	Average	High		Low	Average	High
	Foremen filling out time cards	hours / week / foreman	0.4	1.4	2.45	\$ / year	106,167	371,583	637,000
	Payroll clerks entering time card data into CGC	hours / week / clerk	25	27.5	30	\$ / year	528,281	581,109	633,938
	Processing of replacement checks								
		hours / week / 3 clerks	15	18	21	\$ / year	13,781	16,538	19,294
		hours / week / foreman	1	1	1	\$ / year	1,300	1,300	1,300
		total				\$ / year	15,081	17,838	20,594
	Overpaid checks	hours / week / check	4	10	16	\$ / year	416,000	1,040,000	1,664,000
	Creation of time card forms	hours / week	8.3	10.4	12.5	\$ / year	11,484	14,355	17,227
	Total						1,065,529	2,010,530	2,955,531

Even with only a 25% adoption rate Modern would save \$500K annually with just the new Time Card Reporting application, or over \$2.5mm over a 5-year period

Cumulative Time Card Reporting Savings

Adoption Rate	Years				
	1	2	3	4	5
0	\$0	\$0	\$0	\$0	\$0
25%	\$502,633	\$1,005,265	\$1,507,898	\$2,010,530	\$2,513,163
50%	\$1,005,265	\$2,010,530	\$3,015,795	\$4,021,060	\$5,026,326
75%	\$1,507,898	\$3,015,795	\$4,523,693	\$6,031,591	\$7,539,488
100%	\$2,010,530	\$4,021,060	\$6,031,591	\$8,042,121	\$10,052,651

For Receivables Tracking, the wireless solution eliminates searching for misplaced receipts, which currently costs Modern \$140K annually, or \$700K over a 5-year period

Revised Receivables Process Benefits

Procedure	New Process	Advantages
Receivables Tracking	1) Foreman submits data directly to CGC via phone interface	<ul style="list-style-type: none"> - Immediate notification regarding arrival of shipments - Materials expeditors and foremen collectively spend 150 hours less per week tracking lost receipts



Receivables Tracking Line-Item Savings Annualized

<i>Line Item Savings</i>									
<i>Item</i>	<i>Unit</i>	<i>Range</i>			<i>Unit</i>	<i>Range</i>			
		Low	Average	High		Low	Average	High	
Lost receipts	hours / week		150.0		\$ / year		137,813		
Total							137,813		

For Quantities Reporting, the wireless solution could provide savings of \$250K annually, or \$1.25mm over a 5-year period

Revised Quantities Reporting Process Benefits

Procedure	New Process	Advantages
Quantities Reporting	1) Field Engineer submits data directly to CGC via phone interface	<ul style="list-style-type: none"> - Field Engineer spends 30 minutes, or 83%, less time daily on process - Cost engineer doesn't have to create cost-code manuals



Quantities Reporting Line-Item Savings Annualized

<i>Line Item Savings</i>									
<i>Item</i>	<i>Unit</i>	<i>Range</i>				<i>Unit</i>	<i>Range</i>		
		Low	Average	High			Low	Average	High
Time spent on Quantities process	hours / year / FE		182.0			\$ / year		241,172	
Time spent creating cost code manuals	hours / year / CE		20.8			\$ / year		16,800	
Total								257,972	

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Industry costs to implement this new application would be a one-time fee of \$270K and an annual recurring fee of \$150K

Total Cost of Ownership

	Considerations		Unit	Notes
Current	Network Coverage			
	Current Incremental Cost for Service	100	\$ / month / phone	\$69 / phone + minutes = \$100 / month
	Current Total Cost for Service	240,000	\$ / year	
	Devices / Hardware			
	Nextel i85, i1000 phones	104	\$ / device	\$99-\$109
	Total Devices	250	# devices	
	Total Hardware Cost	26,000	\$	
ot ot re re	Software			
	Mobile Platform license	150,000	\$ / enterprise	3-year license
	ODBC Connector	45,000	\$ / enterprise	
	Per-user application license fee	50	\$ / user / month	
	Total user fees	150,000	\$ / year	Assuming 250 users
ot	<i>Potential Upgrades</i>			
	Voice-recognition software	TBD	\$ / application	
ot	Services			
	Implementation	75,000	\$ / engagement	



Cost of Solution

Application Costs		
One-time software license	\$195,000	\$ / enterprise
One-time implementation fee	\$75,000	\$ / engagement
Recurring software fees	\$150,000	\$ / year

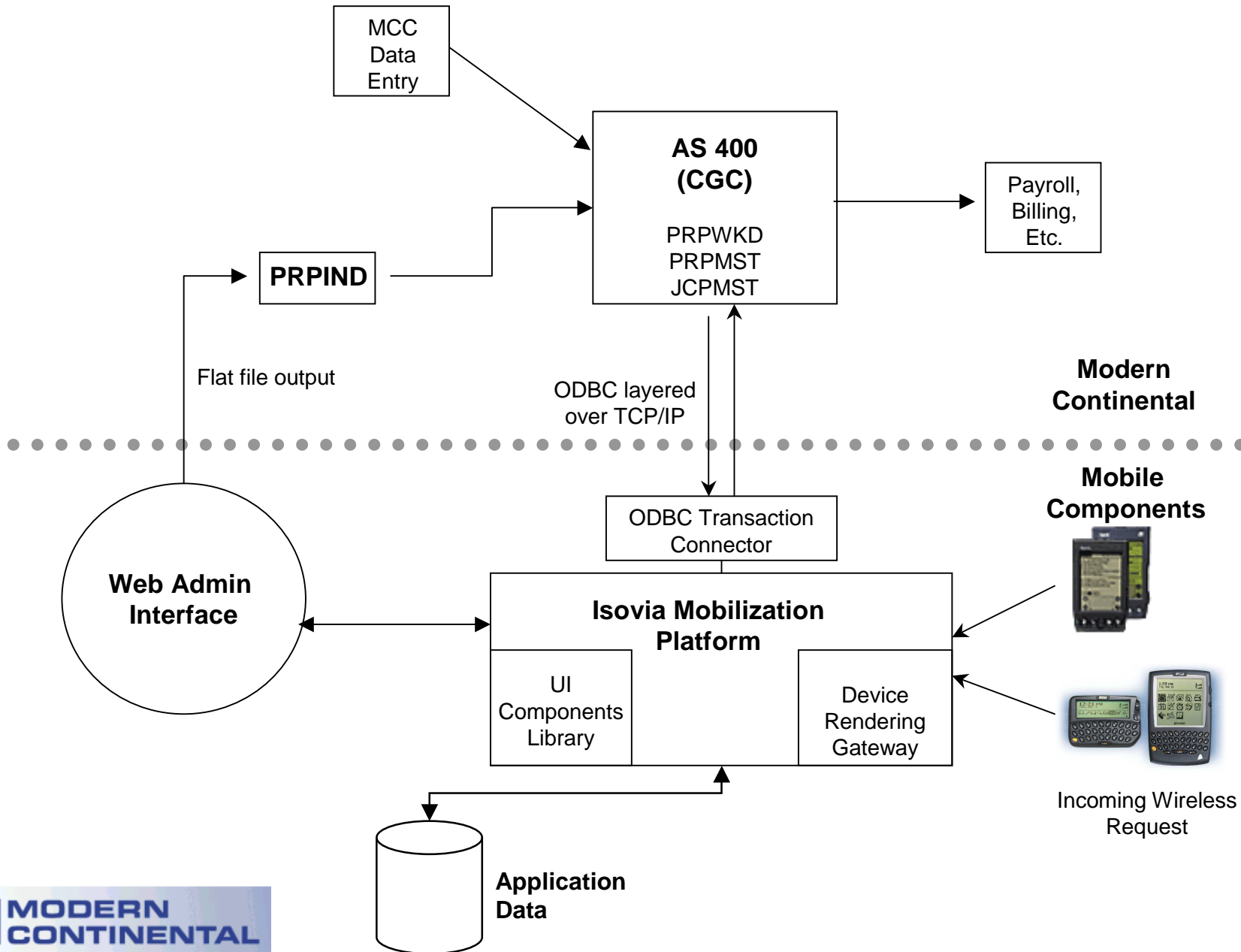
With industry costs considered, not only does Modern recoup the cost of its software in the first year, its ROI after 4 years should average 9.5x for Time Card Reporting, and 11x if it implements all 3 applications

Return on Investment

Year	Estimate	Time Card Reporting			All 3 Applications		
		Savings	Cost	ROI	Savings	Cost	ROI
1	Low	\$1,065,529	\$420,000	3	\$1,461,314	\$420,000	3
	High	\$2,955,531		7			\$3,351,316
2	Low	\$2,131,058	\$570,000	4	\$2,922,627	\$570,000	5
	High	\$5,911,063		10			\$6,702,631
3	Low	\$3,196,588	\$720,000	4	\$4,383,941	\$720,000	6
	High	\$8,866,594		12			\$10,053,947
4	Low	\$4,262,117	\$870,000	5	\$5,845,254	\$870,000	7
	High	\$11,822,125		14			\$13,405,263
5	Low	\$5,327,646	\$1,020,000	5	\$7,306,568	\$1,020,000	7
	High	\$14,777,656		14			\$16,756,578

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Integrating Isovia Platform to CGC at Modern Continental



Time Card Reporting
12/15/01 4:32 pm
RT 3
B. Jones Total: 17.5 hrs
Select day to edit, hit OK

	STD	OTHER
• Sun	8.0	0.5
• Mon	8.0	1.0
• Tue		
• Wed		
• Thu		
• Fri		
• Sat		

Enter employee record to view total accumulated hours and to select day of choice to edit

Time Card Reporting
12/15/01 4:32 pm
RT 3
B. Jones
Select Cost Code, hit OK

1. Excavate w/ Dozer
2. Excavate/Mats/Load Rock
3. Load fill to Truck
4. Mechanics Oiling
5. Place Special Borrow
6. Strip Topsoil w/ Dozer
7. Truck Topsoil to Stockpile

Selecting appropriate job type automatically selects corresponding cost code

Time Card Reporting
12/15/01 4:32 pm
RT 3
B. Jones
TUESDAY: 12/15/01
Excavation w/ Dozer

Select Type, Enter Hours, hit OK

- Standard ----- 8.0
- Double Time
- Over Time

Indicate type of hours spent on job

Time Card Reporting
12/15/01 4:32 pm
RT 3
B. Jones Total: 25.5 hrs
Equip: AA - NN
CC - II
ADD COST CODE?
YES
NO
Notes:

Updated total time calculation

Proceed to add more cost codes before exiting this employee's record

Receivables Tracking

12/15/01 4:32 pm

Select ITEM, hit OK

Water Dispenser
PO#: 00020304

1/2" X 6" EXT COIL TIE
PO#: 00040706

Liquid Vacuum
PO#: 00070503

MORE ITEMS...

Each ordered item indicates description of item along with corresponding PO#

Receivables Tracking

12/15/01 4:32 pm

Vendor: WB Mason

ITEM: Water Dispenser

Make selection, hit OK

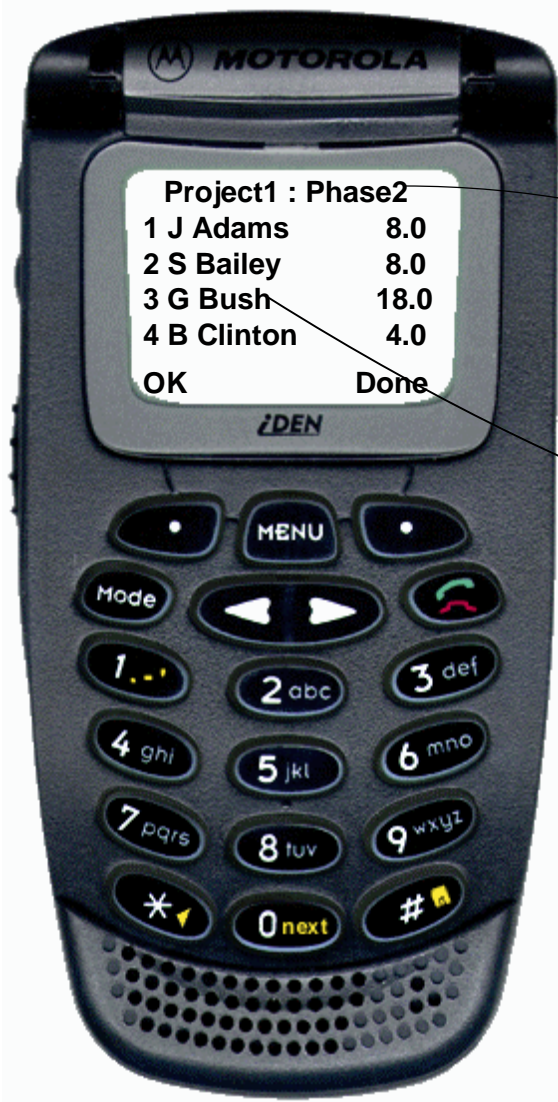
Accepted

Rejected

Partial Shipment

Accessing Partial Shipment allows user to enter a number for amount received

Sample Screens: Phone and Web (Supervisor Approval)



Presidential Builders - Weekly Summary Report - Week of 8/14/00

Project	Proj Num	Phase	Code	Employee	Emp Num	Mon	Tue	Wed	Thr	Fri	Sat	Sun	Total
Project 1		Phase1	21222	Bush, George		0	10	0	0	0	0	0	10
				Carter, Jimmy		8	8	0	0	0	0	0	16
				Nixon, Pat	1	9	5	0	0	0	0	0	14
				Total		17	23	0	0	0	0	0	40
		Phase2	01123	Adams, J. Q.		9	0	0	0	0	0	0	9
				Bailey, Scott		8	8	0	0	0	0	0	16
				Bush, George		8	10	8	0	0	0	0	26
				Total		25	18	8	0	0	0	0	51
Total						42	41	8	0	0	0	0	91

Supervisor (or other) may use web based Admin Tool to approve Time Cards and commit data to CGC

Project Time Frame: Integration, Development, Testing



Activity		Estimated Start Date	Estimated Finish Date
Start of Project		12.15.01	
Analysis and discussion of application workflows		12.15.01	1.10.02
Analysis and discussion of Admin Tool workflows		1.10.02	1.24.02
Formal presentation of workflows and sample screens		1.25.02	
Formal presentation of workflows for Admin Tool		1.25.02	
Architecture analysis and integration spec		1.26.02	2.26.02
Stub demonstration of ODBC integration to CGC		2.26.02	
Admin Tool development		2.27.02	4.15.02
Application workflow development		4.1.02	5.15.02
← Beta version available for testing →		5.16.02	
Delivery of application		6.15.02	
User manual		6.25.02	
← Voice interface integration →		6.27.02	9.31.02





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