Παράδειγμα Project Management Course Deliverable

Monday, January 8th, 2007

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A Siebel Call Center for American Airlines

PURPOSE OF THIS DOCUMENT

This document describes a real project using the methods and techniques shown in lectures taught by Richard-Nicolas Lacroix with purpose the demonstration of absorption of class materials and the exchange of real life experiences. The document has been produced in Microsoft Word and a short Microsoft PowerPoint presentation of the project both delivered in electronic and printed form.

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1. EXECUTIVE SUMMARY

American Airlines has embarked on a program to redefine its future Direct Distribution Business Model (DDBM). Such a model would involve several key elements, such as validating the vision and service strategy, incorporating best practices, optimizing business processes, recommending the platform architecture and, determining the best approach to manage this complex program. We, the PricewaterhouseCoopers (PwC) Global Customer Care Practice, clearly view this as a strategic opportunity for AA to transcend its competition by defining a direct distribution business model that better meets its customer needs.

Scope & Approach

We understand that AA has defined the overall program to include the following 4 projects:

- Overall Approach and Program Management
- Call Center Best Practices Study
- Business Process Re-engineering Study
- Reservations New Platform Architecture Study

Our approach involves using a *highly integrated program management strategy*. In this approach, we recommend that AA consider running the four projects as one larger unified project with common program management and integrated teams. Integration at multiple levels within such a team structure will capitalize on the inherent synergies between the four projects, greatly improve communication, and result in a superior design for the optimal call handling process and systems flows in relation to the chosen platform architecture. We also believe that this approach will have a measurable impact on the quality of the project deliverables as well as the associated costs and timeframe.

We propose a highly integrated approach for the DDBM program. The four requested projects parallel very closely our Customer Care methodology (see Figure 1).

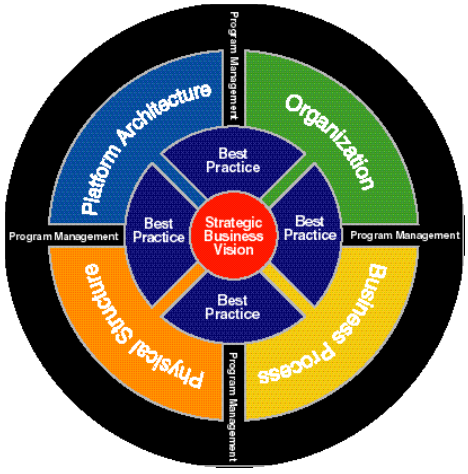

Figure 1: PriceWaterhouseCoopers Customer Care Methodology

Natural synergies exist between these projects, which we will fully leverage to deliver the highest quality in the least possible time.

We have mapped Best Practices for Customer Service Techniques, Physical and Organizational Structure, Work Environment, Employee Performance Measurement, Compensation and Technical Infrastructure into four categories or work streams

- Business Process
- Organization and HR
- Platform Architecture
- Physical Structure

These work streams form the basis for the project teams. Organizing the work in this manner maximizes the leverage of the projects defined in the RFP.

Program management will also be applied consistently across all work stream activities, ensuring the highest quality of deliverables and minimal levels of risk.

All project work will be coordinated in support of the strategic business vision, optimizing the value of the DDBM program to the strategic objectives.

We plan on leveraging our well established call center methodology for the AA Direct Distribution Business Model program. Our methodology has been developed by highly experienced practitioners using proven approaches and techniques from the field.

PwC's methodology is integrated with overall program management to ensure that the goals and objectives of the program are being met. To support this methodology, PwC's Global Customer Care/Call Center Practice maintains the Customer Care Center of Excellence (COE) database which contains over 200 call center best practices. In addition, our methodology utilizes proven data gathering and analysis techniques such as Calls Handled Analysis and "To Be" AHT models.

This methodology allows customization to best fit the circumstances of the particular project. The four phases of this methodology are Initiation, Discovery, Alignment, and Transformation Planning, and the major activities and deliverables are summarized below:

Project Phase/Activity	*Project Key Phase Deliverables*
Initiation	
- Project Startup	- Project plans
- Review business strategy	-Business strategy understanding
- Review DDBM vision	
Discovery	
- ”As Is" Analysis	- Workflow analysis
- Initial business case development	- Applicable best practices
- Future requirements	
- Best practices gap analysis	
Alignment	
- “To Be” business process flows	- Optimized workflows
- Define platform architecture prototype	- Proof of concept prototype
- Build platform architecture prototype	
- Evaluate platform architecture prototype	
- Strategic recommendations	
Transformation Planning	
- Transition/Implementation plan	- Implementation plan
- Finalize business case	- Field test deployment plan
- Support management review	

Resources

We plan on providing highly skilled and experienced practitioners for this key project. We recognize the wide variety of skills needed to effectively conduct this complex assignment and are prepared to meet the challenge. We have assembled a team spanning the areas of Siebel call center implementation, program management, best practices, business process reengineering, call center operations, platform architecture, and system integration. Our team leaders and specialists include:

Richard Lacroix Richard is an experienced project manager with over 50 Siebel Call Center Projects Experience over the last 10 years mostly for the Telecommunications and banking industries. Richard's name has been mentioned as one of the preferred choices of the American Airlines board of directors for this project because of his successful handling of the Atlanta Data-warehouse project for American Airlines Credit Card Center which delivered quality results, early and below budget. Richard will be the interim-project director, he will organize and initiate the project and transition his functions to an American Airlines project director once the project has been stabilized.

Hans Herber Hans is a business process and call center operations expert. He has 13 years of airline reservations center management experience and 17 years of call center operations and consulting experience.

Bud Jordan Bud holds several patents in call center resource scheduling systems. He has over 17 years of call center consulting and work force management experience.

Michael Herman Michael is a highly experienced applications architect specializing in client/server, internet, and call center technologies. Most recently, he designed the integrated web, IVR, CTI, and mainframe architecture for our call center project at Ford Motor Company. Michael has over 15 years of experience.

Howard Kline Howard specializes in call center telephony. He was a senior analyst at the Gartner Group focusing on call center technologies for 4 years. He has over 19 years of experience.

Kevin Schwartz Kevin, a partner with our firm, is our proposed program manager. He has extensive large scale program management experience. Kevin specializes in program management, technology architecture and systems integration.

Our Qualifications

PricewaterhouseCoopers is uniquely qualified to jointly conduct this program with you. We have a global Customer Care/Call Center practice with extensive credentials in the area of large program management, direct distribution business models, business process re-engineering, call center design, etc. Examples of such credentials include:

Amway Call Center Diagnostic. Analyzed call center processes and technology and identified best practices gaps. Developed transition plan and business case.

Waste Management Performed call analysis and consolidation planning.

Ford Motor Company Integrating call center, web, self-service, and mainframe architecture.

Compaq Computer Corp .Developed and rolled out call center applications.

United Parcel Service (UPS) Implemented information systems and telephony architecture to support call center consolidation.

AMR/SABRE SAP Large scale project management.

Our Relationship with AMR, AA, and The SABRE Group

PricewaterhouseCoopers has been enjoying a strong partnering relationship with AMR and its corporate entities for many years. We continue to work together on several major programs which will produce significant business impact - including SAP implementations for AA and SABRE. We are deeply committed to building an even greater working relationship, as evidenced by the increasing scope of mission-critical work performed on AMR's behalf. We look forward to adding yet another successful program to our long-term partnership.

Pricing

Our ability to fully coordinate and leverage the synergies between the projects translates into a highly cost effective and time efficient program for American Airlines. Our fee for this integrated program (11,900 hours over a 14 to 16 week period) will be fixed at $2,200,000 plus actual out-of-pocket expenses.

Conclusion

We at PricewaterhouseCoopers are delighted to have this opportunity to propose on this very significant opportunity at American Airlines. We welcome questions and an opportunity to further discuss our proposal with you.

2. OUR UNDERSTANDING

Overview

American Airlines, Inc. is seeking to define the optimal model for its direct distribution business.

- **Key Drivers**
  - Increasing distribution costs
  - Growing alternatives in distribution technologies
- **Major Objectives**
  - Increase revenue & reduce costs of direct distribution
  - Ensure highest competitive levels of customer service
  - Ensure employee satisfaction
  - Maintain flexibility to change and adapt as AA and its customers change
- **Comprehensive Approach**
  - Analysis and recommendations on business vision & strategies; people, process, and technology management
  - Roadmap for successful implementation.
  - Each analysis requires the application of customer care best practices.
- **Reservations Focus**
  - Physical organizational structure - as facilities age or leases expire
  - Hardware obsolescence - agent PCs
  - Agent compensation & benefits - to facilitate employee retention
- **Expected Results**
  - Business strategy
  - People & process alignment
  - Recommendation & implementation plan

Scope

The scope of this program consists of the following four projects and deliverables as requested by AA:

1. Overall Approach and Program Management

•Program management of the entire project.

•An integrated plan to manage all program components that meets all program and project goals in the shortest possible time at the lowest cost and risk.

•Validation documentation of the results of the other project components.

•An implementation approach plan detailing how to implement study recommendations.

•A business case for implementation including costs/benefits estimates within four weeks of selection.

2. Call Center Best Practices Study

•Best practices findings.

•Strategic recommendations for incorporating best practices into AA Reservations.

•High level transition plan for moving from the current environment to the new environment.

3. Business Process Re-Engineering Study

•Classification of existing workflows into call types.

•Schedule detailing the estimated Average Handling Time (AHT) and annual volume for each call type.

•Work process flow analysis for each existing call type.

•Definition of Reservations optimal future work flows for each call type (incorporating relevant elements of Reservations business requirements and vision).

•Diagrams of optimized workflows for each call type; descriptions of how existing and planned voice and data systems will be utilized in the optimized workflow; and a schedule, with estimated AHT for each optimized call type.

•Prioritization of recommended improvements which take into account: ease of implementation, cost of implementation, impact to customers, and potential cost savings resulting from the streamlining.

•Description of the data "gives and gets" required to accomplish the re-engineered work flows. Descriptions shall include the data fields required to be populated on a new UI, and the information required to be received back on the UI. American Airlines will use these "gives and gets" to develop the UI functional specifications.

4. Reservations New Platform Architecture Study

•Completion of the Architecture Study and prototype models no later than December 15, 1998.

•Development and deployment of recommended architecture options as prototypes for field testing.

•A written report analyzing the results of the architecture options trials and what they mean in regards to the viability of each option supporting AA Reservations near and long term.

•A written study including all items listed above under goals.

•Attendance at American management reviews and assist in ongoing project justification including financial analyses as requested by American Airlines.

•Assistance with ongoing project justification.

Business Units

•The sponsoring organizations are American Airlines Interactive Marketing, Reservations, and Information Technology Services.

•Significant levels of effort and coordination with The SABRE Group (TSG) will be required, particularly for the technical architecture parts of the program.

Transactions

•Our BPR efforts will be directed toward the following four major work flows:

•Domestic Sales

•Domestic AADVANTAGE

•International Sales

•International AADVANTAGE

Locations

•We expect to spend the bulk of our time in AA's Reservations call center in Dallas. We plan to conduct further analysis and significant technical work at The SABRE Group's facilities on an as-needed basis.

•We expect that all other required interviews and project work efforts will take place in AA's business facilities located in Dallas.

Technology Architecture

•Per your RFP, we will review the capabilities of AA's current platform architecture. As is the case with business processes, best practices will be applied to the technology architecture to develop the future desired state and the roadmap of how to successfully implement the solutions.

•We will review AA's current Wide Area Network design and assess its scalability and service level characteristics to determine if there are any obstacles to meeting the desired

future state. However, a detailed review of AA's network operations and support capability is out of scope as this would best be completed as part of an overall enterprise IT capability assessment.

Other Assumptions

•Pricing assumptions are outlined in Section 5. Price Schedule.

•Additional project related assumptions are outlined in Section 6. Assumptions.

3. PROGRAM APPROACH

We propose a highly integrated approach for the DDBM program. The four requested projects parallel very closely our Customer Care methodology. Natural synergies exist between these projects, which we will fully leverage to deliver the highest quality in the least possible time.

We have mapped Best Practices for Customer Service Techniques, Physical and Organizational Structure, Work Environment, Employee Performance Measurement, Compensation and Technical Infrastructure into four categories or work streams

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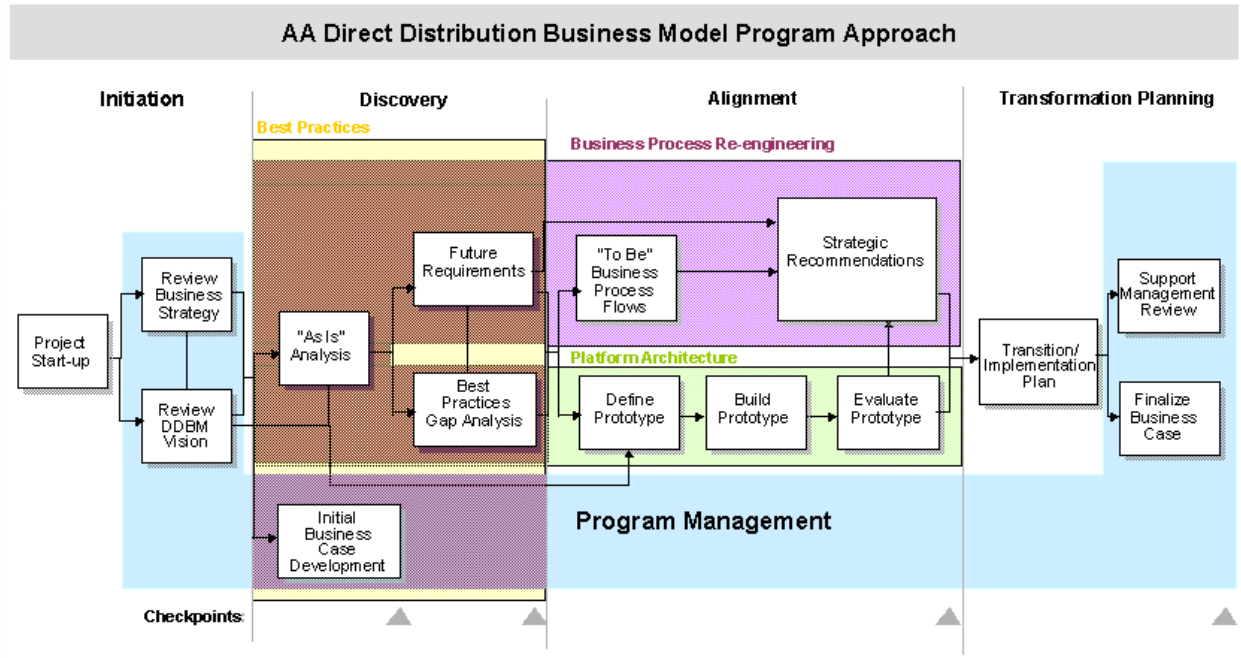
3.1 Program Methodology

AA Direct Distribution Business Model Program Approach



3.2 Program Management

Program Management is the thread that controls and coordinates all of the component projects in order to achieve maximum results. Program Management for AA's DDBM consists of the following major work components:

•Review Business Strategy and DDBM Vision

•Develop Initial Business Case

•Manage Overall Program Delivery

•Validate Program Deliverables

•Finalize Business Case

•Support Management Review

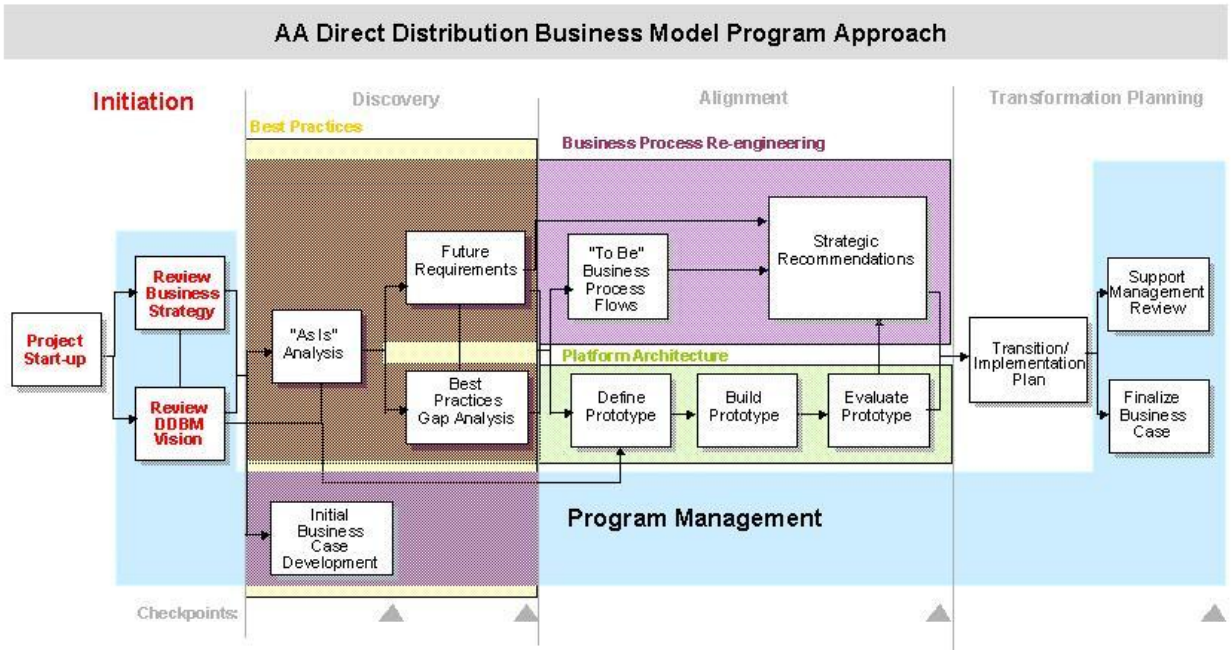
Key Activities

- Focus the project on the highest value activities.
- Clarify and resolve issues of governance and decision-making during the project
- Coordinate the scope change management process
- Identify and prioritize where integration and commonality are most valuable across initiatives and teams
- Create an ongoing framework to make decisions throughout the project
- Validate individual project deliverables
- Coordinate initial and final business case components

Interim Deliverables

- Project schedule and staffing plan
- Status reports
- Steering committee presentations
- Issue tracking and resolution
- Scope validation management
- Quality management assessment
- Communication mechanisms and standards for the entire program
- Deliverable validation results

3.3 Initiation



Project Start-up

This initial phase of the project is intended to:

4 confirm the organization of the project

5 provide for a consistent approach across each of the project teams

6 finalize all logistics for the project

We will work jointly with AA and TSG personnel to pull the project team into a cohesive working unit.

One that understands the project goals, deliverables, and schedule dependencies.

Key Activities

- Confirm detail work plans
- Confirm the project team
- Identify key stakeholders that should be involved in the effort
- Secure the involvement of key stakeholders who will serve on the project team and/or participate in the focus groups
- Confirm information that needs to be gathered by the various teams and appropriate techniques for information gathering
- Summarize list of interviews
- Confirm pro forma deliverables

Deliverables

- Detailed project plan
- Project team organization
- Project team facilities secured

Review Business Strategy and DDBM Vision

During the initial startup period of AA's DDBM program, we will review the overall business strategy and validate DDBM vision. Some of the key activities include assessing the consistency and completeness of the strategy and anticipation of change over time and understanding the current operational capabilities and requirements to support the vision.

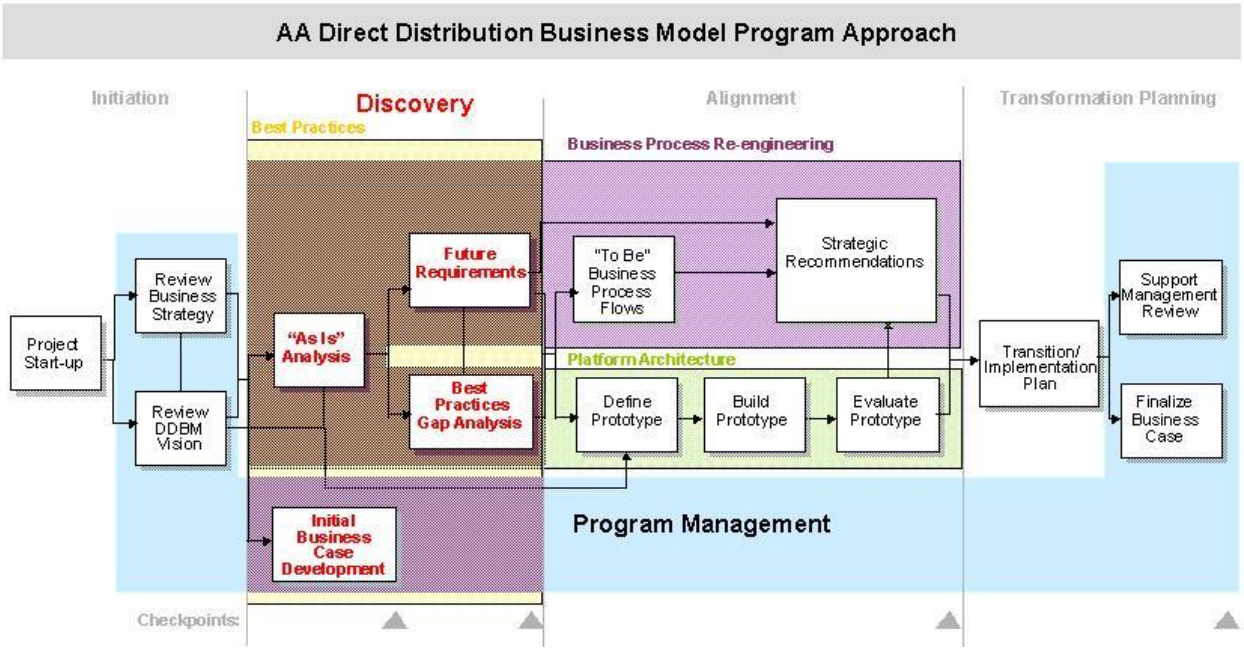
Key Activities

- Understand the external environment for the overall vision and customer service strategy and the forces shaping competition
- Understand the current operational capabilities and needed operational requirements to meet the strategic objectives
- Understand what initiatives and actions are planned to achieve strategic objectives

Deliverables

- Review business strategy and DDBM vision including:
  - Customer service strategy
  - Performance measures
  - HR strategy
  - Technology strategy
  - Interactive access (www) strategy
  - Cross-organization dependencies

3.4 Discovery



Initial Business Case Validation

The purpose of this work component is to provide a high-level business case within the first 4 weeks of the program. Although the level of detail for this deliverable will be constrained by the available timeline, the resulting deliverable will provide high-level estimates for business planning purposes.

Key Activities

- Collect the existing business case for Direct Distribution Business Model (DDBM) program
- Examine & validate assumptions used to derive the costs and benefits
- Re-estimate costs and benefits based on the validated assumptions and PwC experience
- Re-assess cost avoidance and other indirect benefits of the business case based on data gathered in the first 4 weeks of the project and PwC experience
- Develop the Initial Business Case report

Deliverables

- Initial Business Case for DDBM

Organization and HR "As Is" Analysis

The purpose of this phase is to collect and assess critical information about the current call center organizational structure and its HR policies and practices. This phase includes documenting and understanding the following: organization and sizing, resource management, staffing, compensation and reward systems, training and employee development, role definition, performance measures, career pathing and planning, coaching and teaming.

Key Activities

- Gather current organization charts
- Identify key organization knowledge, skills and abilities
- Prepare interview outline(s) and schedule
- Conduct interviews
- Review hiring and recruiting practices
- Review initial and ongoing training
- Review remuneration, rewards and incentives
- Review performance appraisal process
- Assess employee retention
- Assess organizational structure
- Assess job descriptions
- Assess career planning and path definition
- Assess management and team leading style, agent empowerment
- Assess internal and external communication

Deliverables

- Working papers for:
  - HR policies and practices
  - Performance measures and targets
  - Organization maps
  - Roles and responsibilities
  - Compensation

Business Process "As Is" Analysis

In this phase of the project, a detailed analysis of call types and work flows is conducted, with the intent of validating the "As Is" condition. This provides the project team with a comprehensive and clear understanding of the call types received, maps them against existing work flows and quantifies annual volumes and AHT.

Key Activities

- A random sample of calls is observed followed by interviews with appropriate AA personnel to quickly assess the mix of transaction (call) types and the existing work flow. This information is used to develop a call analysis survey form.
- A call analysis is done to identify, categorize and quantify the major call types handled by the four Reservations Department functions. The study spans a normal seven-day period and is orchestrated to ensure the captured data represents a statistically valid sample size. Calls are both logged and timed.
- A workshop is conducted to diagram work flows, classify them according to call types and gain consensus among the joint AA/PwC project team before proceeding.

Deliverables

- Working papers for:
  - Classification of existing work flows into call types.
  - Schedule detailing the estimated Average Handling Time (AHT) and annual volume for each call type.

Platform Architecture "As Is" Analysis

This phase of the study identifies key components of AA's current customer reservations environment and determines its overall effectiveness for meeting AA's customer reservation strategy and needs. The project team will become familiar with the current environment infrastructure components, performance metrics and reservation system linkages. The project team will summarize and document its findings in an "As Is" technology infrastructure report.

Key Activities

- Determine existing telecommunications hardware configurations, locations, capacity, utilization and age.
- Determine existing telecommunications software components such as IVR software, ACDs, CTI features and network intelligent routing software.
- Document: items such as:
  - Existing user interfaces
  - Development languages (e.g. 3GL, 4GL and object-oriented languages
  - DBMS and data dictionary tools
  - LAN topology
  - WAN (e.g. leased line, VAN)
  - Speech recognition deployment
  - Customer service applications
    - On-line transaction processing (OLTP)
    - On-line analytical processing (OLAP)
    - Batch/decision support real-time

Deliverables

- Working papers for:
  - Document reservations customer service technical infrastructure
  - Current technology issues and concerns
  - Document reservations desktop applications and capabilities

Physical Structure "As Is" Analysis

This phase documents the current reservations facilities and determines total call handling capacity. In coordination with the Organization and HR project team, an assessment of the impact of facility sizing on employee satisfaction and productivity is conducted.

Key Activities

- Document reservations facilities size, expansion potential and call handling capacity.
- Assess workstation ergonomics.
- Assess training, lunch and break room facilities.

Deliverables

- Work papers for:
  - Physical Structure

Future Requirements

The purpose of this phase is to identify the high-level requirements for the new call center operations. The requirements are defined from the alignment to the business strategy, value propositions, and interviews with AA business users and degree of readiness for change. The project team will gather requirements for all work streams including: Organization & HR, Business Process, Physical Structure and Platform Architecture.

Key Activities

- Conduct user interviews
- Gather high-level user requirements
- Validate requirements to DDBM vision

Deliverables

- High-level future requirements for:
  - Organization & HR
  - Business Process
  - Physical Structure
  - Platform Architecture

Best Practices Gap Analysis

This phase of the project will identify cross-industry best practices within the four work streams of Organization & HR, Business Process, Physical Structure and Platform Architecture. Once best practices are collected, a gap analysis is conducted that compares best practice to the current state of AA's reservation department and future requirements. Gap closure recommendations are then prepared.

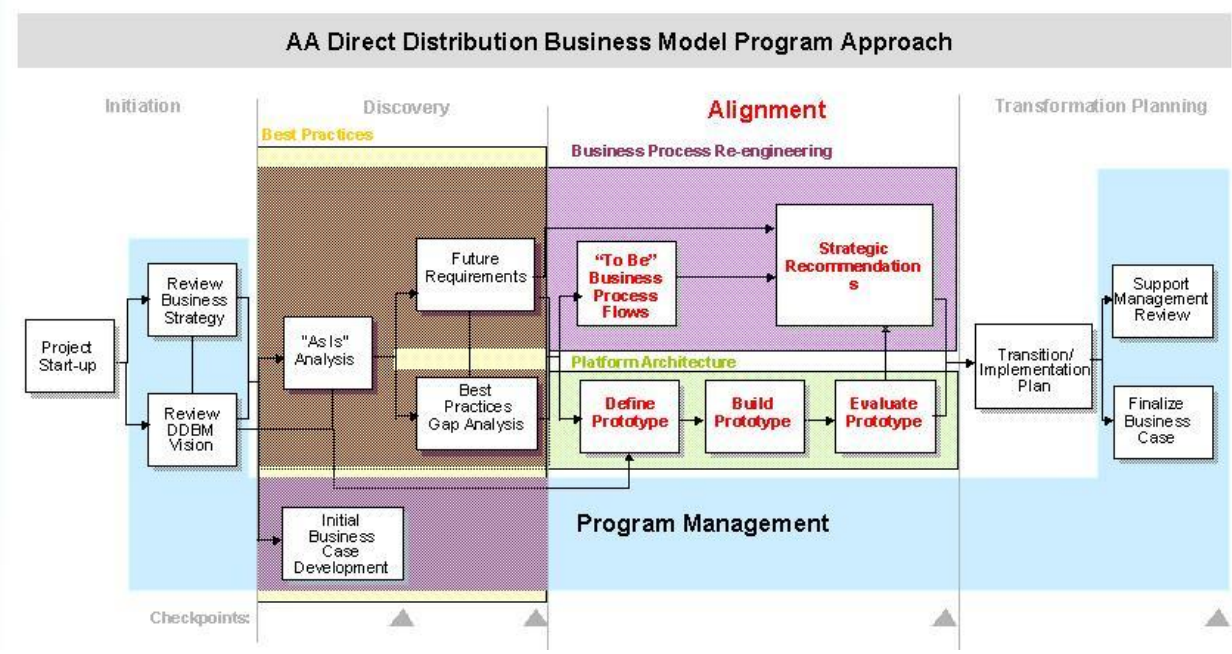
Key Activities

- Compare "As Is" Results and high-level requirements to Best Practices and AA Vision:
  - Organization and HR
  - Business Process
  - Physical Structure
  - Platform Architecture
- Prepare gap analysis report
- Identify gaps
- Conduct root cause analysis
- Identify opportunities for improvement
- Identify gap closures

Deliverables

- Applied best practices findings and gap analysis report

3.5 Alignment



"To Be" Business Process Flows

The PwC project team defines "To Be" business process flows based from process inefficiencies, non-compliance and best practices. An envisioning session is conducted with AA personnel and members of the Platform Architecture work stream to design optimal work flows.

Key Activities

- Record "best-in-class" call handling examples and conduct workshop with AA personnel to establish performance benchmarks based on duration, desired outcome and perceived customer satisfaction.
- Perform quality call analysis to compare call handling quality against performance benchmarks.
- Assess impact of the "As Is" and "To Be" platform architecture on business process work flows.
- Conduct "Day In The Life Of" analysis of a random sample of call center agents to document their actual activities and gauge any potential workplace environmental impact upon the "To Be" process definition.
- Conduct envisioning sessions to design the "To Be" process environment for each work flow.

Deliverables

- Definition of Reservations optimal future work flows for each call type
- Diagrams of optimized work flows for each call type.
- Descriptions of how existing and planned voice and data systems will be utilized in the optimized work flow, with estimated AHT for each optimized call type.
- Description of the data "gives and gets" required to accomplish the re-engineered work flows.

Define Prototype

The Define Prototype activities involve establishing the detailed proof of concept plan and design along with taking the necessary preparation steps for readying the various technical components that comprise the models' environment. Integral to the definition steps will be identifying the particular scenarios (3 will be defined) within the first four weeks of the project. The following activities will be accelerated for 3-4 business processes in order to provide timely input to the prototype:

3.5 "As-Is" Analysis

3.6 Future Requirements

3.7 Best Practices Gap Analysis

3.8 "To Be" Business Process Flows

These scenarios will be translated into scripts that can be mocked up to understand the configuration work required. These options will be identified jointly with TSG and AA personnel. Two prototypes will be defined.

Key Activities

- Define testing objectives and test parameters
- Select scenarios and develop detailed scripts
- Create screen mockups to visualize scenarios
- Design data requirements
- Prepare environment for tests
- Coordinate vendors
- Develop technical analysis testing simulation process

Deliverables

- Prototype scenarios and scripts
- Screen mockups
- Testing approach
- Prototype bill of materials

Build Prototype

The Build Prototype section involves the creation of the working prototype that will include sample data sets from production, interfaces to SABRE for existing transaction calls. The build process will be performed jointly with TSG and AA personnel to ensure a hands-on understanding of the technical components. Based on the options identified, two distinct prototypes that handle the call scenarios will be developed.

We expect the prototype scenarios to involve the following components/layers:

- CTI layer - Desktop - SABRE (test environment)
- Softphone - Desktop reservation application

We expect to use the SABRE connection as a test environment that is comparable to production in terms of API calls and performance. However, we do not expect new transactions or modifications for the API calls to SABRE to be developed. We will utilize existing API routines in the prototype development.

Key objectives of the build activities are to configure the technical components and ensure they work together in an integrated error-free fashion and can execute the call scenarios. Learning from the workflow and best practice analysis will be incorporated to the configuration.

Key Activities
- Configure desktop application based on scenario and model designs
- Integrate technical components as designed
- Integrate to SABRE
- Develop auto-testing tool scripts
- Unit test components
- Review and approve prototype with TSG and AA personnel

Deliverables
- Tested prototypes ready for evaluation
- Automated test tool scripts

Evaluate Prototype

The project team will analyze and report on the trial results of the various prototype tests. A final conclusion and commentary will be developed that will highlight the pros and cons of the platform options. Results will be collected and analyzed as the scenarios are tested. Based on the measurements and priorities outlined in the Define Prototype section the categories and results will be prioritized to define the platform that best meets the AA's call center environment (future state). Key objectives are to determine the recommended platform to deploy for field testing.

Key Activities
- Execute automated tests and collect response time
- Collect results
- Rerun scripts and tests as necessary
- Analyze technical analysis statistics
- Identify, classify and understand issues encountered during prototype integration and scenario execution
- Develop platform comparisons for call scenarios by model
- Analyze results
- Preview results with TSG and AA management
- Develop conclusions and recommend platform

Deliverables
- Trial results and conclusions
- Working papers for Field Test Deployment Plan

Strategic Recommendations

The Strategic Recommendations activities validate, prioritize and define the transformation steps of the "To Be" process into the AA Reservation center. The focus will be on the impact to the organization, physical environment, measurements and training that will support the new workflows and envisioned state.

During this stage we will direct a series of sessions that will determine the impact of the "To Be" definitions and prioritize the recommendations based on key measurements such as productivity improvements (AHT, ACW), service levels (ASA, abandon rate) and revenue enhancement potential (average reservation $'s). We expect these sessions will be held with AA Reservation management, supervisors and agents (either separately or in a combined setting).

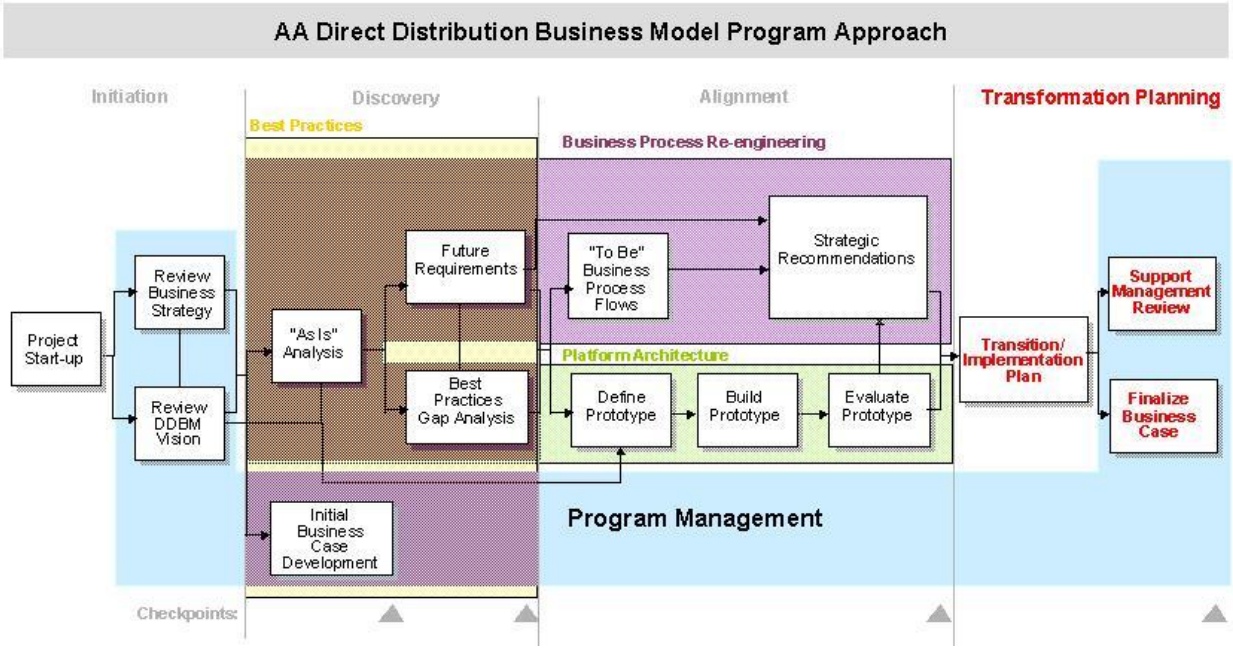
Key Activities

- Conduct working sessions with AA management, supervision and agents
- Determine measurements and criteria to prioritize
- Define transformation steps for impacted areas:
  - HR Management
  - Work Environment
  - Scheduling/Forecasting
  - Compensation
  - Performance Measurements
  - Physical Environment
  - Organization and Culture
- Prioritized & formulate recommendations

Deliverables

- Strategic recommendations
  - Priorities
  - Short-term quick hits
  - Implementation projects identified

3.6 Transformation Planning



Transition/Implementation Plan

The purpose of this work segment is to develop a feasible & immediately actionable plan for implementation of the targeted business processes and technologies for DDBM transformation.

Key Activities

- Assess transition drivers and barriers
- Segment business process & technology targets for implementation into immediate & future scope
- Develop sequenced task list for implementation
- Establish timing and dependencies
- Determine project milestones
- Determine required changes
  - People/Organizational
  - Business Processes
  - Technology

Deliverables

- Transition/Implementation Plan
- Field Deployment Plan

Finalize Business Case

Finalized Business Case will facilitate a fully informed management decision regarding the DDBM program. This business case will be developed with comprehensive input from the Organization & HR, Business Process, Physical Structure and Platform Architecture work streams. Costs and benefits will be based on the actual scope to be implemented.

Key Activities

- Define performance measurements and accountabilities for the DDBM program
- Determine categories for costs and benefits
  - One-time vs. On-going costs
  - Hardware, software, training, support costs
  - Capitalized vs. non-capitalized costs
  - Tangible vs. Intangible benefits
  - Revenue enhancement vs. cost reduction benefits
- Determine implementation assumptions & constraints
- Calculate contingency factors

Deliverables

- DDBM Business Case
- Risk factors and contingencies

Support Management Review

The Support Management Review activities are intended to assist, advise and support AA and TSG personnel with the presentation and justification of conclusions and implementation approaches to management. These events will comprise the main management expectation setting opportunities for the new platform recommendation and revised workflows. We foresee the work to involve additional financial analyses and the development of presentations derived from project deliverables. These efforts, presentations and issue management activities will be performed jointly with AA and TSG personnel and we will play a supporting role.

Key objectives will be to justify the conclusions in a business case format highlighting the appropriate implementation approach to turn the recommendations into reality. Although presented as a final recommendation step, we envision that this process will occur early in the project's tenure through discussions and presentations with management regarding project objectives and in progress findings.

Key Activities

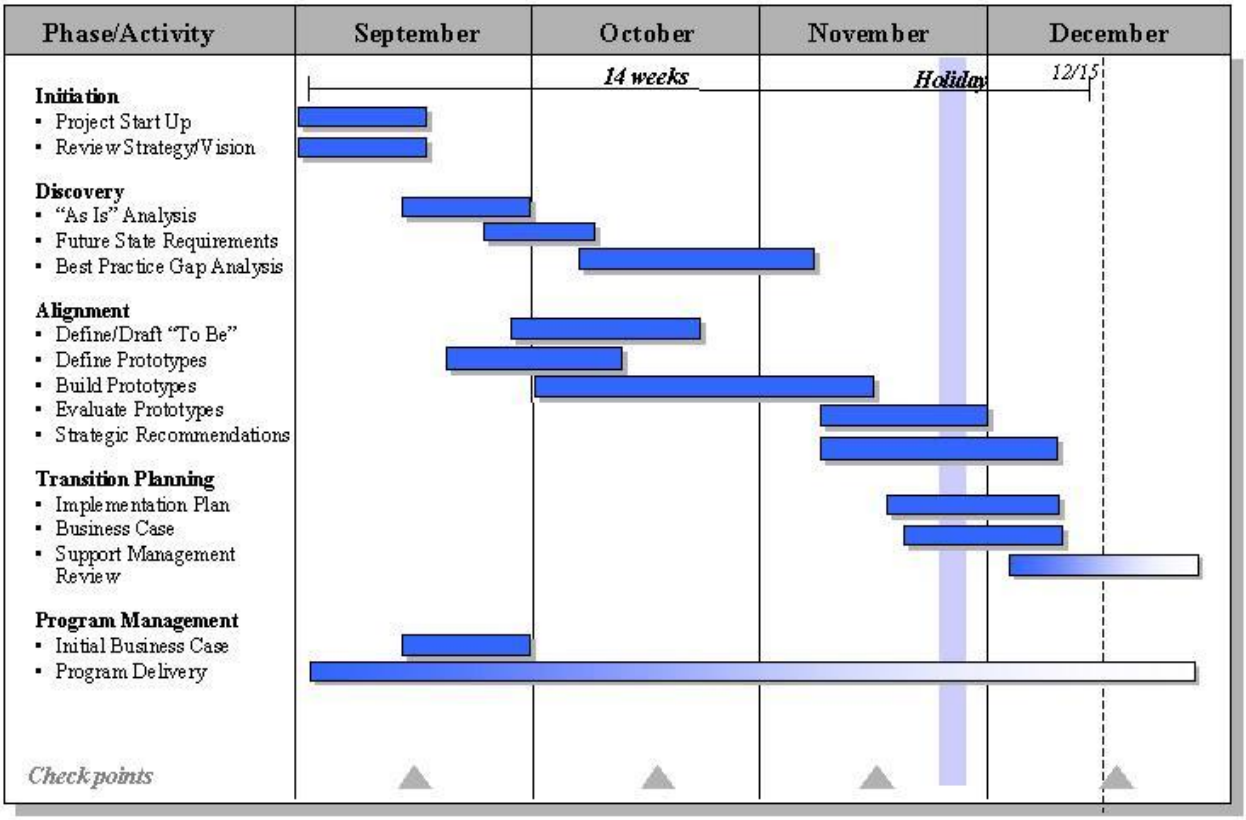
- Assist in project justification to management working with AA and TSG personnel
  - presentation development
  - communication
  - financial analysis
  - additional analysis on options as required
- Identify and work issues as they arise

Typical Deliverables

- Management presentations
- Financial analyses

4 PROJECT PLAN AND RESOURCES

4.1 Project Timeline



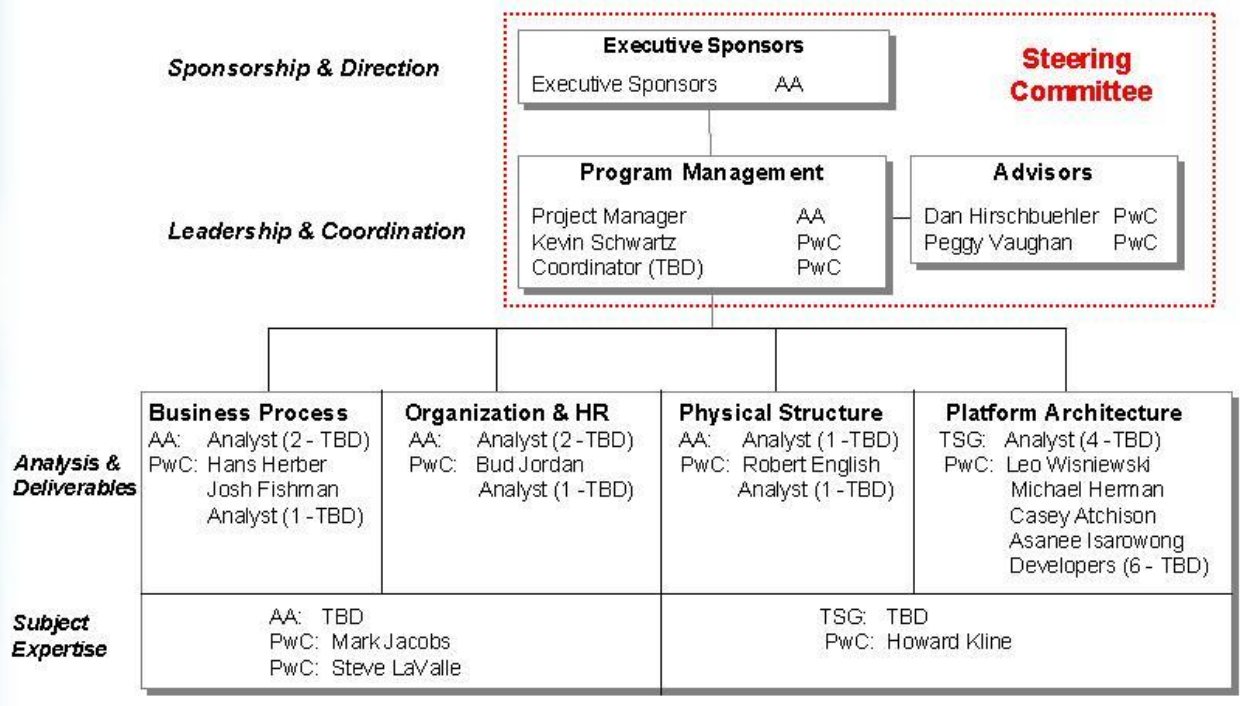
5 Expected started date for the project is during the week of August 31, 1998. Conclusion with the exception of activities to support management review is the week of December 14th.

6 3 - 4 “To Be” business processes will be defined in the first 4 weeks of the program in order to support the platform architecture prototype.

7 The project duration is effectively 14 weeks taking into account the Thanksgiving holiday.

Schedule assumes management review support will conclude the week of January 11, 1999. Support will be performed by the program manager and two team members.

4.2 Project Organization Chart



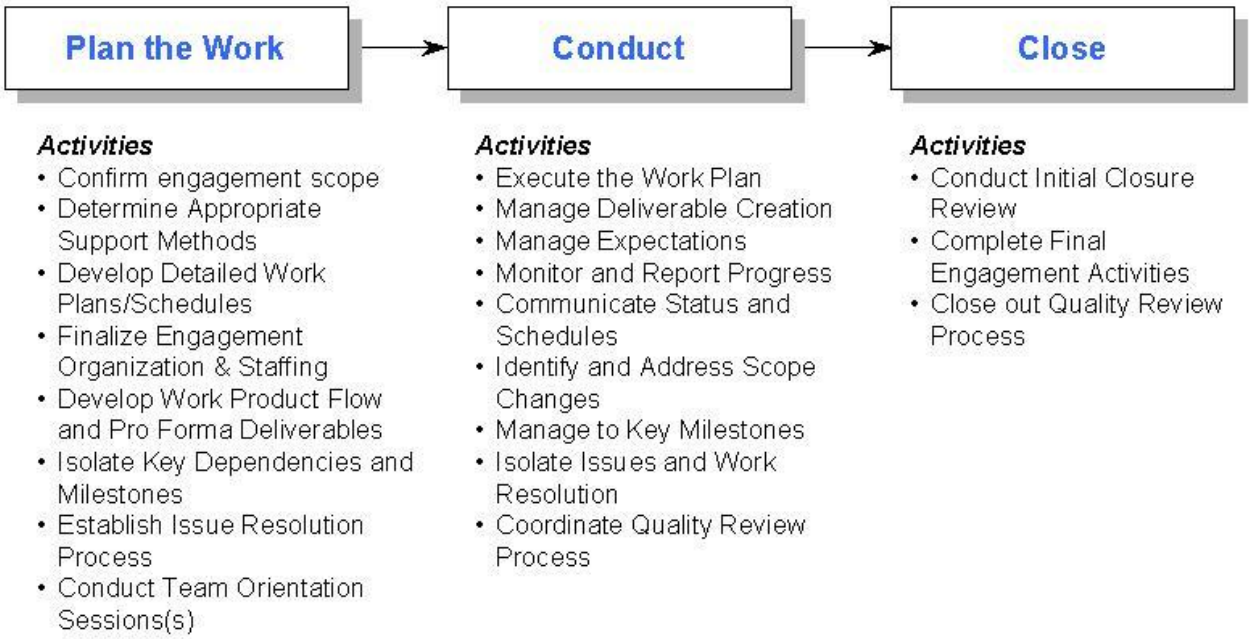
5 PwC plans to use a combination of full-time personnel and part-time Subject Matter Experts to complete this project. The team we propose for this effort is designed to leverage the key strengths of our Global Customer Care/Call Center practice, including a balance of customer management/call center strategy and information technology expertise, as well as project management expertise to ensure successful project execution.

6 Additional AA and TSG staff may be identified during the Project Start up activities.

4.3 Project Management

To deliver this fully integrated approach the project management techniques and practices will be the essential factor to provide direction, resolve issues, handle resource requirements and administrate the program. The Program Management personnel will have direct responsibility for delivering this project. Key success drivers for this group include a commitment to achieving results; prompt issues resolution, and knowing the schedule dependencies.

PwC utilizes a Project Management Methodology to ensure that the milestones and activities are monitored, tracked and completed. We see this method as three phases that are significant to managing this project. They are Plan, Conduct and Close. Overall the deliverables are a successfully delivered project completed on-time, on-budget and with results that meet expectations and quality standards.

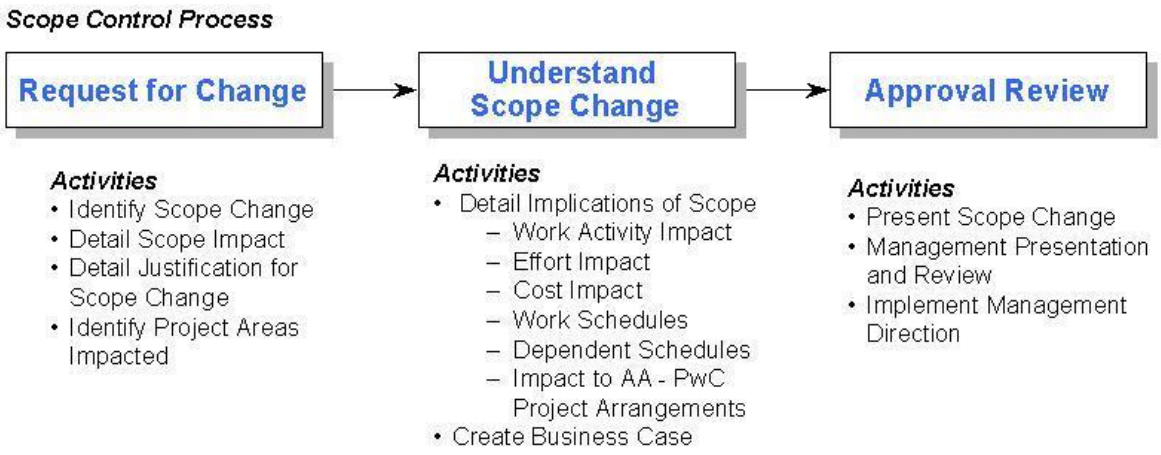


4.4 Change Management

Our Change Management approach involves a process to identify the project issues which will impact the delivery schedule, cost, resources or functionality. Additions to scope and key issues are the focus. For this aggressive time schedule, a process to manage scope must be closely followed.

The Program Management personnel will be directly responsible for the scope change and issue coordination roles for the project. Working jointly with AA personnel we will detail the identified changes for scope additions.

Escalation and communication to the project Steering Committee personnel will be necessary for major milestone impacting obstacles. We will define the appropriate parties during Project Start-Up and work this process throughout the term of the engagement.



4.5 Resources

The matrix below details a sampling of the specialized resources that PwC has at its disposal, and their relevant skill sets. A "X" indicates that the individual has experience in the particular field and is able to fill the role of either a subject matter expert or team leader.

Personnel	Team	Project Management	Program Management	Human Resources	Organizational Design	Change Management	Business Process Reengineering	CallCenter Design	CallCenter Operations	CallCenter Technical Infrastructure	System Implementation
Dan Hirschbuehler	Program Mgmt	X	X				X	X			X
Kevin Schwartz	Program Mgmt	X								X	X
Mark Jacobs	SME-CallCenter	X	X	X		X	X	X	X	X	X
Hans Herber	Business Process	X		X	X		X	X	X	X	
Bud Jordan	Organization and HR			X	X		X	X	X	X	
Howard Kline	Platform Architecture	X						X	X	X	X
Steve LaValle	SME-CallCenter	X		X	X	X	X	X	X		
Josh Fishman	Business Process					X	X	X	X		
Robert English	Physical Structure	X		X			X	X	X		
Michael Herman	Platform Architecture									X	X
Leo Wanlewski	Platform Architecture	X						X			
Casey Atchison	Platform Architecture	X						X	X	X	X
Aranee Isanowong	Platform Architecture							X		X	X

For more details on any of the above individuals, please refer to the summary resumes included in the appendix section 10.2

4.6 Project Risk

PwC is aware that certain amount of Risk is involved in the project related to the availability of key personnel (project manager / advisory people). While maintaining high availability of all persons involved in the project PwC has minimized the risks in the human factor. This is achievable due to many replacement people PwC has in many key areas in different parts of the world. Furthermore, problems can also emerge in a) the evaluation stage of the prototype b) the implementation plan of the transition, and c) in the Initial Business Case.

a) The evaluation stage of the prototype could reveal technical issues that may delay the project schedule up to 8 working days including re-evaluation.

b) The implementation plan in the transition process may be rescheduled if users endorsement percentage is average to low. Part of the implementations' part migration process can further delay the projects' schedule up to 3 days.

c) The Initial Business Case scenario may be redefined in a second stage in week 7-8 and delay the schedule up to 2 weeks.

PwC has minimized these Risks as described in Section 4.4 in a Change Management approach so the risk of delay is estimated to be less than 9 working days in total.

5 PRICE SCHEDULE

Estimating Approach

Based upon our experience on projects similar in scope, complexity and size, PwC has developed a Call Center methodology that provides a framework for the entire program. This methodology has been built by practitioners who specialize in the Call Center and Direct Distribution area. PwC has been using this methodology on its projects with significant success.

The methodology uses a model to facilitate estimates at various stages of the system life cycle. Our model is methodology based which utilizes key estimating metrics, such as business processes, number of call scenarios, type of architecture, number of users and number of interfaces etc. Complexity factors such as complexity of call scenarios, platform magnitude and performance requirements, as well as degree of organizational change, also contribute to the level of effort. We have developed metrics for this project based on the information provided in the RFP, the recent briefing and the response to our questions.

Pricing

We propose a fixed fee in accordance with the AA pricing requirements. Our level of effort (11,900 hours over a 14 to 16 week period) is based upon the scope of work, the program approach, and the assumptions contained in this proposal. The fixed fee for an integrated approach incorporating all areas of the program is $2,200,000. Out-of-pocket expenses incurred during the program will be

billed in addition to the fee amount at actual cost incurred. As is customary, we have included our PwC General Terms and Conditions that will apply to this effort.

As requested the schedule below describes the pricing for the program by phase and by project.

Project Pricing by Project by Phase			Total
Program Management			$ 425,000
Best Practices			$ 400,000
Initiation	$	40,000	
Discovery	$	120,000	
Alignment	$	160,000	
Transition Planning	$	80,000	
Business Process Re-Engineering			$ 625,000
Initiation	$	62,500	
Discovery	$	187,500	
Alignment	$	250,000	
Transition Planning	$	125,000	
Reservations New Platform Architecture			$ 1,200,000
Initiation	$	120,000	
Discovery	$	300,000	
Alignment	$	540,000	
Transition Planning	$	240,000	
Program Total by Projects			$ 2,650,000

In the event we are awarded less than the integrated program scope, we will need to further define in more detail the assumptions about the responsibility, touch points, technology, timeline etc. between the projects. Accordingly, the price for the individual projects is subject to successful closure from such definition.

6 ASSUMPTIONS

Purpose

This section provides assumptions that were used as the basis for our Proposal. It is divided into two main parts: General Assumptions and Assumptions by Project Component.

General Assumptions

American Airlines (AA) will provide the PricewaterhouseCoopers (PwC) Project Team all hardware (with the exception of PCs), software (with the exception of licensed office tools - i.e. Windows 97), firmware and infrastructure necessary so that the Project Team can perform their services in a manner consistent with the overall Project Plan. AA will also provide PwC with office space and facilities for work on-site including access to project LAN(s), connectivity for PwC laptops, monitors, telephones, printers, copiers, administrative support, and faxes.

- AA will provide to PwC access to AMR personnel as required for PwC to perform its services in accordance with the Project Plan, including subject matter experts who will provide information on “As Is” and "To Be" environments and gaps between "As Is" and "To Be" environments.
- Schedules and dates are important to achieve, but nonetheless represent estimates and may be revised during the course of carrying out the Project upon agreement with AA project management.
- Information provided to PwC in the RFP and during the RFP response process is accurate and complete.
- All third party vendors providing services to AMR will perform in accordance with the overall Project schedule.
- Issues will be resolved in a timely manner. No major issues will require more than two business days to resolve and resolution of issues will not impair Project progress.
- All Project services will be performed and completed in the English language only.
- All AA project team members defined in this proposal will be available at the commencement of the project and will be assigned to work full time on this effort.

Assumptions by Project Component

Overall

- Site visits will be made only to the DFW call center.
- AA will provide a financial analyst to prepare the business case to AA’s internal standards of completion, and provide baseline cost estimates for current processes and transactions for benefit assessment and project prioritization purposes.
- AA senior management will be available to review/revise and confirm the strategic recommendations and the business case.
- AA staff will be available to provide assistance in the development of the transition plan.

Program Management

- Any 3rd party vendors involved in the project will be required by AA to follow the established Program Management guidelines.
- An implementation approach plan detailing how to implement study recommendations will be provided by PwC. This will be based on the recommended approach for each of the component studies.

- Completion of a business case for implementation (including costs/benefits estimates) is highly dependant upon the availability of necessary information an AA resources in a timely manner.

Best Practices

- The scope of the Best Practices review will be guided by the six areas identified in the RFP and will also include the call flow business process and the technology infrastructure.
- Strategic recommendations for incorporating best practices into AA Reservations will be drawn only from the best practices study results.
- Documents explaining AA call center business vision, strategy, and goals are readily available to PwC to help the project team develop business requirements for a new agent platform.

Business Process Re-engineering

- AA will make available customer service representatives to perform collection and tallying tasks associated with the call performance measurement analysis.
- Quantification of work flows (AHT and call volume) will be based on historical data to be made available by AA to PwC. It is assumed that a statistically appropriate number of years of history is available. The quantification of future flows will be verified via interviews with American executives, through the use of simple modeling tools, and through actual measurements for the call flows prototyped.
- Any modification to the approach and plan developed may impact the estimate of AHT savings.
- Classification of AA's existing work flows into call types and recording of current work process flow will be based on customer service representative interviews. AA will be responsible for arranging such interviews with appropriate resources.
- Back office operations, e.g., how a ticket is delivered to a customer, are outside the scope. As a result, any changes to this assumption will impact the project cost.
- The scope covers no more than 50 "To Be" workflows.

Technology Architecture

- Two platform architectures will be prototyped.
- PwC will provide one set of recommendations for the optimal architecture structure and its components.
- Cost estimates of entire architecture development cycle (i.e., design, construction, testing, implementation, hardware and software, ongoing support and maintenance requirements) by phase for the recommended architecture as well as potential benefits for business case and project justification are contingent upon the chosen approach. Any changes to the scope, approach, or timeline will impact the cost estimates.
- PwC will make best efforts to complete the Architecture Study and develop the prototype models no later than December 15, 1998.

- PwC will invest up to a maximum of 2 resource hours/week towards attending AA management reviews and assisting in ongoing project justification including financial analyses.

- No more than three call scenarios will be prototyped on the new architecture. PwC will have access to AA staff to identify the most valuable call scenarios to prototype. AA will supply call-handling metrics (e.g. call duration, hold times) if the call flow to be prototyped is also currently implemented within its systems.

- The prototype will not include any changes to SABRE or AAdvantage databases or desktop functionality.

- The prototype will interface with the SABRE reservation system. Appropriate SABRE resources will be made available to assist in this integration within the timelines prescribed by the project.

Pricing Assumptions

- Our fixed fee includes PwC and its subcontractor's costs only.

- Our fee assumes a fixed monthly billing schedule covering 100% of the fixed fee during the planned life of the project. At the end of each month, an invoice will be submitted.

- AA will perform their responsibilities in a timely manner in accordance with the project plan contained in this proposal and updated during the project.

- AA will resolve issues in a timely manner consistent with achieving the dates required by the work plan. Critical issues will be resolved within 48 hours.

- While program management responsibility is shared between AA and PwC, AA retains overall responsibility for the project. The organizational and methodological approaches for managing the project will be as outlined in the proposal or as advised by PwC.

- Project metrics as described throughout the proposal including but not limited to the number of interfaces, conversions, and custom reports and forms are accurate.

- Our fixed fee is valid for a project start within 30 days.

- To improve retention of our staff, PwC reserves the right to conduct a portion of the work off-site and to implement staff programs to reduce travel.

- There will be no delay between Phases of work. Also, AA quality assurance requirements will not delay the project timelines.

- If the requirements definitions change during or after design or prototyping, AA recognizes that there will likely be increases in costs due to the delay of the prototype.

- Key AA and TSG Project Team members will be dedicated to the Project full time and will be expected to work a common project schedule with PwC Project Team members.

- The Project Advisors are empowered to make design decisions regarding how business transactions should be performed as part of the configuration of Application Software and for the implementation.

- Any impacts upon PwC's obligations caused by any mergers, consolidation or other acquisitions or dispositions of or by AA or its affiliates after the Effective Date are out of scope.

- No more than 50 "To Be" workflows will be created.

- Two platform architectures will be prototyped.
- Stress testing of prototypes will not be performed.
- Field tests are not included in the scope of this project.

7 PROVIDER PROFILE AND QUALIFICATIONS

7.1 Firm History and Financial Structure

For nearly 150 years, Price Waterhouse has been helping the world's leading companies solve complex business problems. Through a world-wide network comprising 53,000 professionals in 434 offices, Price Waterhouse assists clients in effecting organizational and strategic change; using information technology for competitive advantage, complying with statutory audit and tax requirements; and implementing strategies to improve business performance.

Coopers & Lybrand was founded in Philadelphia in 1898 and was one of the largest firms of professional consultants and accountants in the world with offices located in 96 principal cities of the United States and as part of an international partnership; C&L is represented in 99 nations. The Firm offers a broad range of professional services including management consulting, examination of financial statements, tax return preparation and planning, special accounting and tax services, and actuarial and employee benefits consulting.

Combined, PricewaterhouseCoopers is the largest professional services firm in the world, with all of the resources, expertise, and experience necessary, to help our clients from strategy definition and planning through implementation. PricewaterhouseCoopers LLP registered in Delaware as a registered limited liability partnership effective July 1, 1998, and offers accounting, auditing, tax, management consulting and related services in the United States under that name.

PricewaterhouseCoopers is fully insured, including workers compensation and will provide a certificate of insurance during contract negotiations.

United States	**Global**
Revenue: $4.52 billion	Revenue: $13.02 billion
Total Personnel: 34,000	Total Personnel: 135,000 (Number countries: 150)

7.2 Qualifications - Market & Customer Management (MCM)

Market & Customer Management — Our commitment is to work with global clients to develop and implement a Market-Intelligent Enterprise that effectively links customer loyalty with profitable growth.

This is accomplished through three service offerings:

- •Sales Productivity
- •Customer Care
- •Relationship Marketing

Each offering is enabled by technology components:

- •Sales Force Automation
- •Customer Call Centers
- •Product and Pricing Configurators
- •Electronic Commerce
- •Data Warehousing & Mining

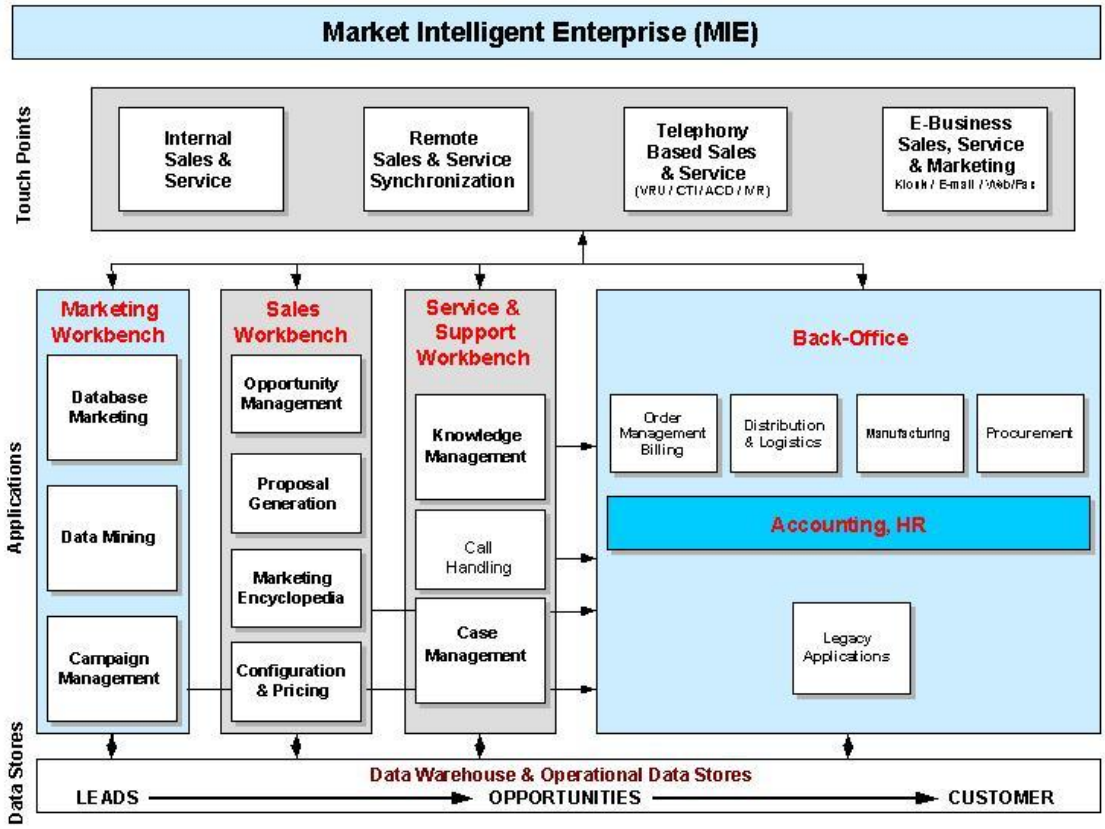
7.2 "Market-Intelligent Enterprise" Model

Global market leaders are investing to effectively balance the delivery of customer value with profitable growth. There are eight major characteristics of businesses which have a strategic view of their customers. We call these leaders *Market Intelligent Enterprises.*

- Viewing customer information as a strategic asset
- Measuring and managing customers by profitability
- Making every customer contact a marketing event
- Delivering a single enterprise wide view of the customer

- Developing customer-preferred strategic channels
- Building customer loyalty to the enterprise and enterprise loyalty to the customer
- Using technology as a proactive enabler for customer relationships
- Enabling team and fact-based selling

PwC recognizes the need to embrace a Market-Intelligent Enterprise. To realize this vision PwC has developed an MIE template-an open framework consisting of decision support applications and a customer-centric data warehouse front-ended by SFA, e-commerce and call center technology.



7.2 Qualifications - Analyst Assessment

Industry Analysts' Assessment of PW's TERM Capabilities

Price Waterhouse is the recognized leader in Technology Enabled Relationship Management (TERM) as assessed by industry analysts.

Industry Analysts' Assessment of PW's TERM Capabilities

Price Waterhouse is the recognized leader in Technology Enabled Relationship Management (TERM) as assessed by industry analysts.

"Price Waterhouse has strength in call centers and database marketing…"

Source: Gartner Group, November 1997

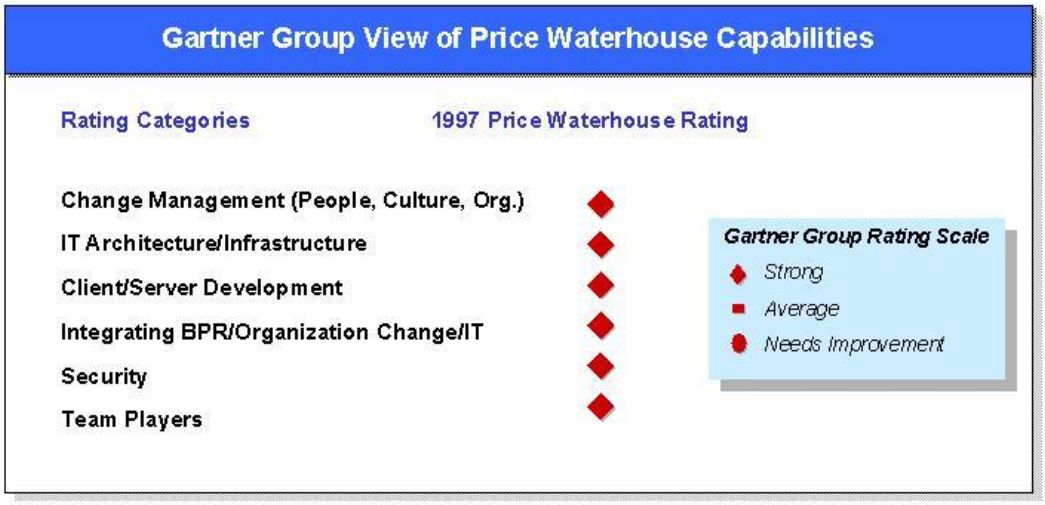
Industry Analysts' Assessment of PW's BPR Capabilities

Price Waterhouse is the clear leader in Business Process Redesign as assessed by independent industry analysts.

Source: Gartner Group, November 1997

Industry Analysts' Assessment of PW's Other Areas

Price Waterhouse is rated "strong", Gartner's highest rating, in all of the other critical areas that are needed to ensure a project's success.



Source: Gartner Group, November 1997

7.3 References – Citations

Client	*Project Scope/ Description*	Project start/ duration	Approach/ Program Management	Center Best Practices	Call Center Business Process Re-engineering	Call Center New Platform Architecture
Amway	Customer care diagnostics. Analyzed Amway customer care processes and technology and compared to best practices. Identified gaps and compared to long term vision. Identified costs and benefits to implement.	4/98-current	X	X	X	X
Waste Management	Selected as the consulting partner for the global implementation of a customer management solution that includes the consolidation of the customer service function from 700 branch locations to a few large call centers.	8/97-5/98	X	X	X	X
Compaq Computer Corporation	Designed, developed and implemented custom-developed call center application and redesigned business processes world-wide across 22 call centers. Largest single site roll-out involved a 7 center big bang roll-out covering 1,000 users.	1/95-5/96	X		X	X
Swiss Telecom	Selected to reengineer the network and customer care organization and facilitate a culture shift to increase customer value. This solution will implement single point-of-contact customer service, reduce time to market, improve employee productivity, lower operating costs, and increase quality and speed of service.	6/97-3/98	X	X	X	X
Ford Motor Company	Selected as the global implementation partner for the restructuring of HR practices and creating a Tiered Service Delivery environment integrating a virtual call center with data warehouse and HR people & processes. Currently leading the effort in the US, UK, South America, and Canada.	7/97-current	X	X	X	X

Client	*Project Scope/ Description*	Project start/ duration	Approach/ Program Management	Center Best Practices	Call Center Business Process Re-engineering	Call Center New Platform
Newbridge Networks	Selected to implement new customer service applications in global call centers located in Hong Kong, US, Canada.	11/97-current	X	X	X	X
Storage Tek	Selected to reengineer enterprise wide customer service and support functions. The project includes new customer service applications and integration to SAP.	10/97-current	X	X	X	X
Los Angeles Department of Water and Power	Organizational restructuring of the customer services business unit of the largest municipally owned utility in the United States. Process redesign focused on call center operations, billing, field operations and technology systems. Annual savings of $10 million were identified	6/97- current		X	X	
Tektronics	Selected to assess current call center operations, ascertain customer needs, apply best practices and, based upon these analyses, recommend improvements. The scope of this engagement covers people, process and technology aspects of customer service and extends to a number of diverse call center operations.	6/98-current	X	X	X	X
Medium sized catalog company	Preformed call center diagnostic and workflow analysis to identify operational improvements. Recommended re-engineering points based on best practices and applicable technology.	5/97-8/97	X	X	X	

Client	*Project Scope/ Description*	Project start/ duration	Approach/ Program Management	Center Best Practices	Call Center Business Process Re-engineering	Call Center New Platform
Esso International	Completed a Business Process Reengineering effort for all Customer-Facing operations. 22 Latin American call centers will be consolidated into four locations. PwC is assisting the program office overseeing the effort by developing project plans for each consolidation, and aiding the client in the technology selection effort. Technologies to be implemented include: IVR, Fax-back, PRX/ACD, Call-Blending, Call Monitoring, and Performance Management software, and Workforce Management software. When complete, the project is expected to return $300,000,000 in cost savings over three years.	8/97-6/98	X	X	X	X
Pension Benefit Guaranty Corporation	Led a major project to implement a new Call Center. Numerous technologies were involved, including: ACD (Automatic Call Distributor), IVR (Interactive Voice Response), and the Performance Support System (PSS). PSS is the desktop application for the CSRs which provides integrated data screens and Business Help Text side-by-side in a Graphical User Interface (GUI) environment.	1995-1996	X		X	X
United Parcel Service	Conducted an information technology feasibility study to define the enterprise-wide information systems and telephony architecture to support the consolidation of 62 call centers into 10 Mega-Call-Centers, supporting 7,500 customer service representatives. C&L also conducted an end-to-end analysis of business requirements to drive the development of a new desktop application for the CSRs. Utilizing our Call Flow Analysis technique, we were able to quickly identify opportunities for immediate customer service improvement and operational efficiencies.	1995-1996	X		X	

Client	*Project Scope/ Description*	Project start/ duration	Approach/ Program Management	Center Best Practices	Call Center Business Process Re-engineering	Call Center New Platform Architecture
Core States Financial Corp.	Designed developed, and implemented a customized desktop application for the CSRs as well as the underlying Call Center infrastructure to support the Human Resources function. This Employee and Management Information Line (EMIL) application provided the essential data screens required to handle most of the calls and comprehensive help functionality. C&L also designed a Case Management system that would track all follow-up activity through to full resolution of the original request. C&L trained the CSRs for effective use of the new application and developed performance metrics for the Call Center.	1996-1997	X		X	X
AT&T	Assessed all of the major Customer Care providers in the industry and developed ongoing assessment tool for placing over $1 billion in annual Customer Care business. These reviews also revealed substantial over-billing refunded as a result of this engagement.client	3/97 - 12/97	X	X	X	X
AT&T Business Units	Provided a broad range of Customer Care services, including Help Desk design and management, performance management and technology design and implementation.	3/95-6/98	X	X	X	

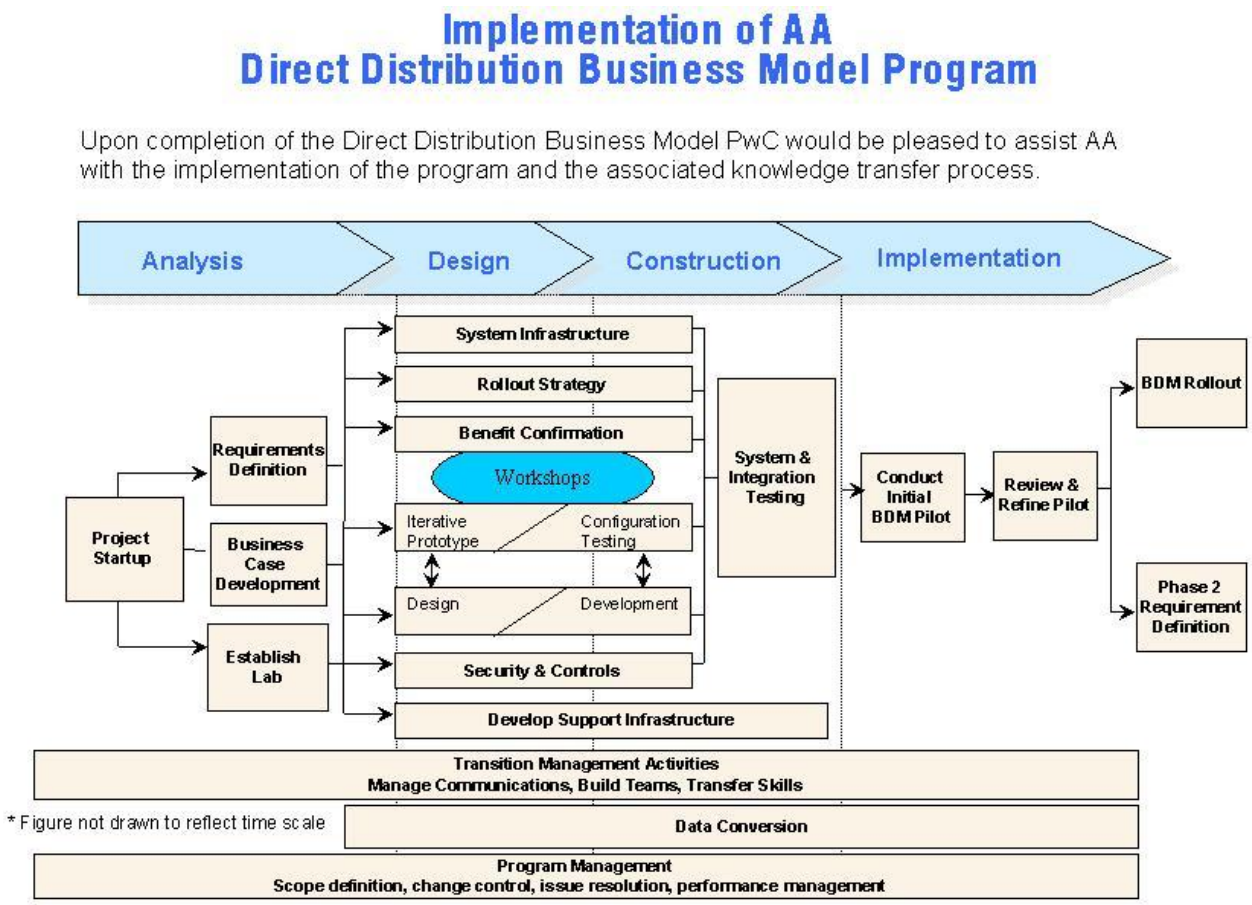
Client	Client Contact	Telephone #
Waste Management *Call Center Diagnostic and Best Practices Review*	Kevin O'Toole Kim Pollitt	(630) 572-2494 (630) 572-8659
Amway *Requirements assessment of all customer facing departments including organization processes and technologies*	Bruce Jabaay	(616) 787-4643
Newbridge Networks *Design and implementation of customer service applications in global call centers*	Tom Woodson	(703) 736-5070
American International Group (AIG) *Design and implementation of inbound and outbound service and telemarketing call center*	Randy Epright	(973) 533-2084
AMR Corp. *Large scale program and project management*	Scott Nason Tom Horton Jaynne Allison	(817) 967-4027 011-44-181-577-4701 (817) 967-1320

8 EXISTING RELATIONSHIP WITH AMR

Project	Scope	Time period	Resources/ % PwC
SABRE Financials	Project I: Enabled the ENHANCE project in Europe (19 countries) Multi-basis, multi-currency and multi-language reporting	1994-1995	50/24%
	Project II: Delivered an enterprise financial system for SABRE. SCS/SDT/STIN 'single sourced financial data from SAP Roll out to 24 countries (Latin America and Asia)	1994-1996	35/26%
	Project III: Enhanced the enterprise system and provided new functionality Upgrade of SAP system to employ new functions and reduce system overhead Billing of associate revenue (largest component of revenue) from SAP	1996-1997	33/27%
AMR/ Canadian Financials	Sunset of 20 Legacy systems All corporate financials (CLAS, AACAPS, etc.) Eight local MCLA country systems Multi-language, multi-basis and multi-currency functions 'Big Bang' approach; rolled out all functions at once (enabled elimination of intermediate conversions and interfaces) Standardized financial processes around SAP's best practices Reduced data redundancies and created single source of financial information Conversion of all tax assets and computation of six bases of tax depreciation Large complex project (440,000 hours); delivered on time and budget	1996-1998	88/28%
AMR/ SABRE HR / Payroll	Integrates human resource and payroll data, business processes and functions Foundation for integrated payroll/human resources Employee Resource Center (ERC) Year 2000 solution for HR and payroll Sunset of over 20 Legacy systems (e.g; CEIS, payroll, Simmons 2.2), including many stand-alone PC-based systems Capture information about, process and report on international employees Phased implementation by function and subsidiary	1996-1999	253/17%

Project	Scope	Time Period	Resources/ % PwC
SABRE SMARTT	By 10/98 all SABRE billing and revenues will be sole-sourced to one system Correct billing format Reduction of redundant data/processes By Q1 1999 SABRE will Rollout Euro (EMU) compliance in Europe Migrate off AMR corporate procurement systems On 11/99 SABRE will Provide service orders from single source (will sunset COSMACC/MIDAS) Enable cycle time reductions in client service processes	1998-1999	61/31%

9 FUTURE SERVICES



Future Services - Knowledge Transfer

Transition Management, Knowledge Transfer & Training

One of the key considerations of the implementation of the Direct Distribution Business Model will be the human factors and personnel impact to ensure effective delivery and transition to the new operating model (processes, policies, measurements, systems, desktop applications, etc..). With AA's expansive call center network and large population of agents that will require "refitting", transition activities will be integral to a cost-effective and timely implementation.

To assist in the implementation process PwC proudly offers services tailored to communication, education, training and transition of personnel to new levels of performance. Through consultants from our Center for Performance Improvement (CPI) we partner with clients and project teams to provide an integrated approach to training assessment, communication and curriculum design, training and education delivery and administration services for training personnel. We would be most interested in discussing with you how to

ensure effective delivery of the knowledge transfer and training efforts of the implementation of DDBM.

10 APPENDIX

10.1 Example Deliverables

Organizational Considerations: Quality Monitoring Practices

Company	Practice/Why Use/Benefit
• Allstate Insurance	• Monitoring rates specific action TSR should perform (e.g., "use proper greeting") • References to training modules of job aids listed to provide clarification
• AT&T Universal Card Services	• Team leader performs silent/remote and side-by-side monitoring • 5-10 calls per month per TSR • Monitoring viewed as skill improvement opportunity
• American Express Travel Services	• On-going monitoring three times per week • On-line logging and reporting of monitoring results • Results collected and trended to find issues; funneled into training
• Wells Fargo Bank	• Rates service as excellent, standard, needs improvement and unacceptable for the categories of: (1) policies and procedures, (2) responsiveness and approach, (3) accuracy, reliability and clarity and (4) tone and manner • Monitoring results part of performance plan
• PW Best Practice compilation	• Generally "yes/no" rating per measure used rather than "1-5 or 1-9" gradations • Categories to measure include call management, accuracy, courtesy, communication, customer satisfaction and "I can help" attitude • Monitoring used to give immediate feedback on ways to improve call-handling skills and provide immediate recognition if superior service has been provided • Findings from monitoring are documented and disseminated to others in organization to improve overall quality • Software beginning to be used to document results and to assist in monitoring process (taping, TSR selection, etc.)

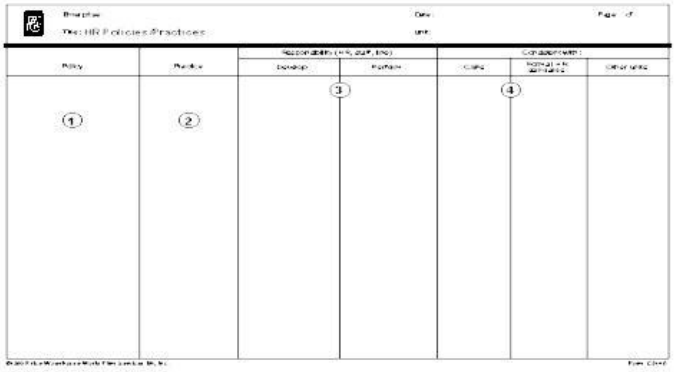
Illustrative Best practice inventory for monitoring, used to determine gaps compared to "As Is" environment

Business Process Re-engineering Deliverable

Purpose: To capture Human Resource policies and practices.

Completion Instructions

1. **Policy.** List the organization's HR policies.
2. **Practice.** Indicate the organization's actual HR practices in use.
3. **Responsibility.** Indicate what organizational entity(ies) is responsible for developing and for performing each policy.
4. **Consistent with.** Indicate whether HR practices are consistent with CSFs, formal HR standards, and other units' practices.



***Template* deliverable format for "As Is" assessment**

Purpose: To capture the organization's current skill base.

Completion Instructions

1. Task ID. Indicate the task ID for the task where competencies are being inventoried.

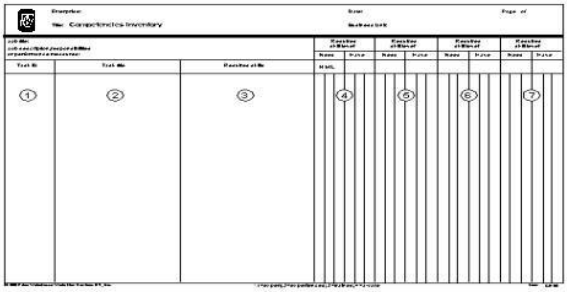
2. Task title. Indicate the title for the task where competencies are being inventoried.

3. Required skills. List the knowledge and skills required to perform the task to targeted levels of performance.

4.Required/current knowledge/skill level. Indicate the required and current knowledge/skill level, using the following scale: (1) not available, (2) aware, (3) highly developed/experienced, (4) advanced.

5.Required/current flexibility. Indicate the required and current degree of flexibility, using the following scale: high, medium, low.

6.Required/current effectiveness. Indicate the required and current degree of effectiveness, using the following scale: high, medium, low.



***Template* deliverable format for "As Is" assessment**

Business Process Re-engineering Deliverable

CST MEMBER: DATE:

CALLER TYPE	CALL TYPE	CALL HANDLING NOTES	AFTER CALL WORK NOTES
1. COMMERCIAL 2. RESIDENTIAL 3. ROLLOFF 4. PROSPECT 5. OTHER	1. REVENUE 2. INFORMATION 3. ASSISTANCE 4. CANCEL 5. OTHER	CONTENT:: BARRIER: IMPACT: Call Handle Time:_____(seconds)	CONTENT: BARRIER: IMPACT: : After Call Work Time:_____(seconds)
CALLER TYPE	**CALL TYPE**	**CALL HANDLING NOTES**	**AFTER CALL WORK NOTES**
1. COMMERCIAL 2. RESIDENTIAL 3 .ROLLOFF 4. PROSPECT 5. OTHER	1. REVENUE 2. INFORMATION 3. ASSISTANCE 4. CANCEL 5. OTHER	CONTENT BARRIER: IMPACT: Call Handle Time:_____(seconds)	CONTENT: BARRIER: IMPACT: After Call Work Time:_____(seconds)
CALLER TYPE	**CALL TYPE**	**CALL HANDLING NOTES**	**AFTER CALL WORK NOTES**
1. COMMERCIAL 2. RESIDENTIAL 3 .ROLLOFF 4. PROSPECT 5. OTHER	1. REVENUE 2. INFORMATION 3. ASSISTANCE 4. CANCEL 5. OTHER	CONTENT: BARRIER: IMPACT: Call Handle Time:_____(seconds)	CONTENT: BARRIER: IMPACT: : After Call Work Time:_____(seconds)

***Template** used to assist in analyzing call types and workflows*

Best Practices Deliverable

'As Is' Assessment	Best Practices Findings/Gap Analysis (gaps highlighted in RED)
Physical & Organizational Structure *To what extent are call centers using home-based workers and what economic benefits have been realized?* No current use or future plans for home-based workers.	Use of home-based workers remains limited. Cost to deploy is prohibitive ($ 3,500 per emp). Penetration of call center marketplace is < 5%. In majority of individual cases, home-based workers represent < 10% of total FTEs. In addition to economics, call center management issues - performance feedback, on-going training, linkage to corporate culture - are a significant challenge.
Customer Service Techniques *Do any call centers provide contact options for different customer segments?* No differentiation in channel access based upon customer segments / profitability.	Service delivery channels have expanded to include: • voice, ivr, and fax (mature > 90% penetration) • email, web and kiosk (emerging < 25% penetration) Best-in-breed companies are now linking customer segmentation, service delivery and channel strategies. Benefits include: unit cost reduction, improved customer satisfaction/retention levels among high-end customers, increased ROI.
Call Center Technology *How is CTI being leveraged to reduce cost and enhance customer service?* Limited use of CTI for customer identification and needs qualification only in Domestic and International AAdvantage.	Deployment of CTI exploding (45% CAGR). Areas of application include: caller identification, customer needs qualification, call routing, skills matching, information delivery, call monitoring, performance feedback. Emergence of protocol standards is driving increased application development and price performance. Key enabler of customer segmentation, service delivery and channel strategies.

Illustrative

Business Process Re-engineering Deliverable

Base call analysis of a "no variance" call.

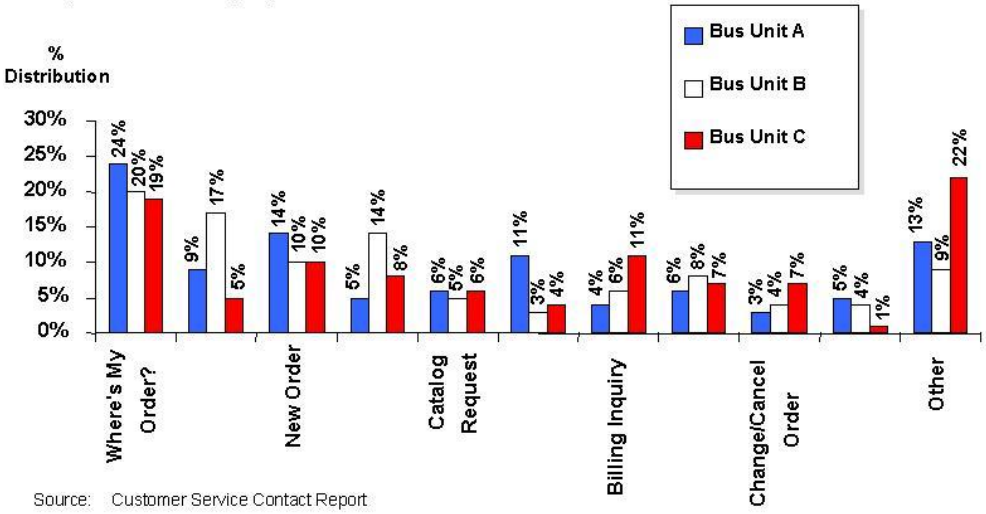
Step Start Time	Step	Step Duration
0:00	Greeting	0:05
0:05	Customer request to make order	0:05
0:10	Request for Quick Service Number	0:09
0:19	Name/address verification	0:11
0:30	Request telephone number	0:12
0:42	Request ship-to	0:55
1:37	Request item number	0:10
1:47	Verify item number and product	0:03
1:50	Confirm delivery info	0:20
2:10	Greeting card info taken	0:17
2:27	Verify greeting card info	0:08
2:35	Request next ship-to	0:03
2:38	Telephone special	0:06
2:44	Confirm total order	0:06
2:50	Request bank card info	0:15
3:05	Verify bank card info	0:15
3:20	Confirm order info	0:06
3:31	Sign-off	0:14
3:45	End call	

Source: PW analysis

***Illustrative* Work segment breakdown for a particular call type**

Business Process Re-engineering Deliverable

- The distribution of customer service contacts across businesses show that the greatest number of calls are made by customers trying to track orders. Bus Unit B customers also make a noticeably higher relative number of calls concerning product questions and product complaints. Billing inquiries seem to represent a relatively high number of Bus Unit B Customer Service contacts.

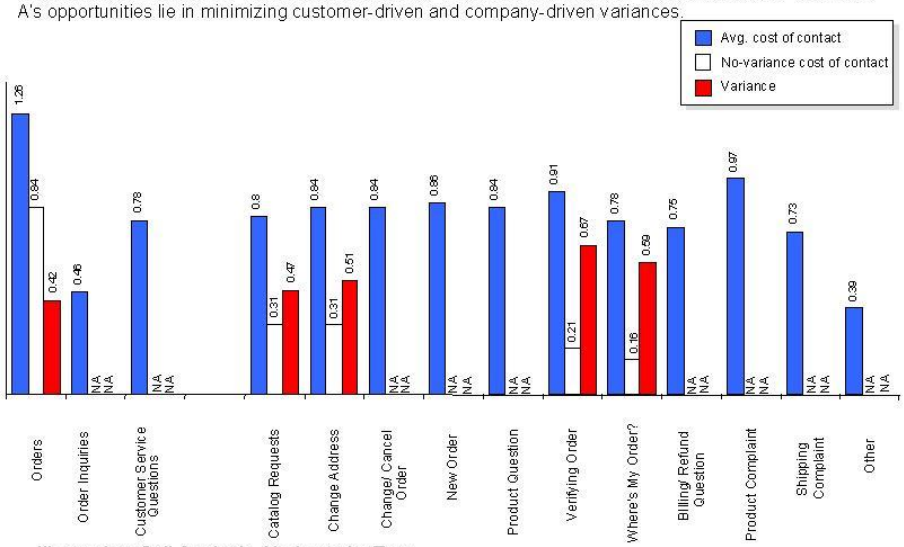


Source: Customer Service Contact Report

***Illustrative* Customer Service Call Distribution Analysis**

Business Process Re-engineering Deliverable

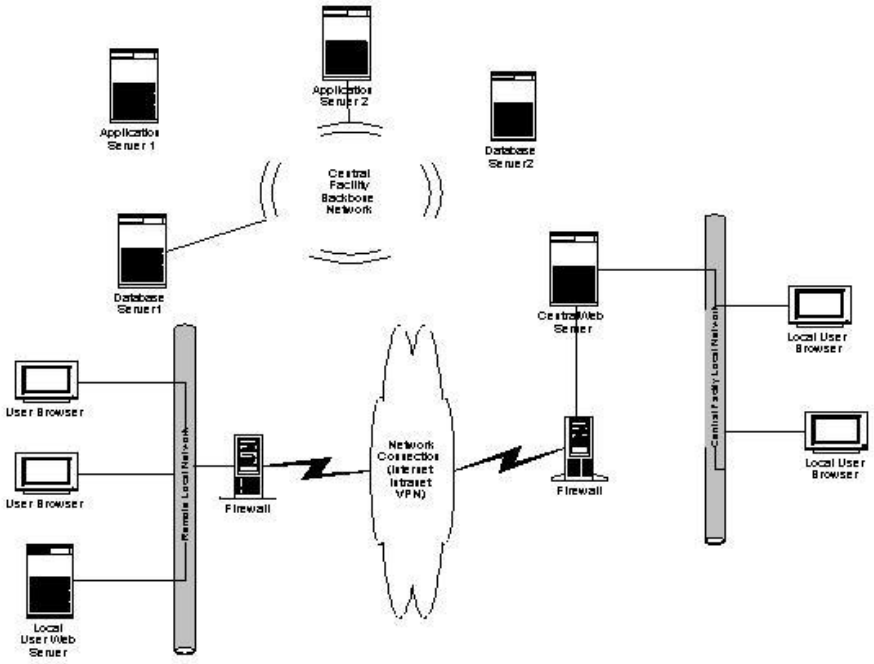
- Call variances are events that occur during the order entry or certain Customer Service calls that elongate the duration of those calls. Variances are customer-driven, company-driven or revenue-driven. Company A's opportunities lie in minimizing customer-driven and company-driven variances.



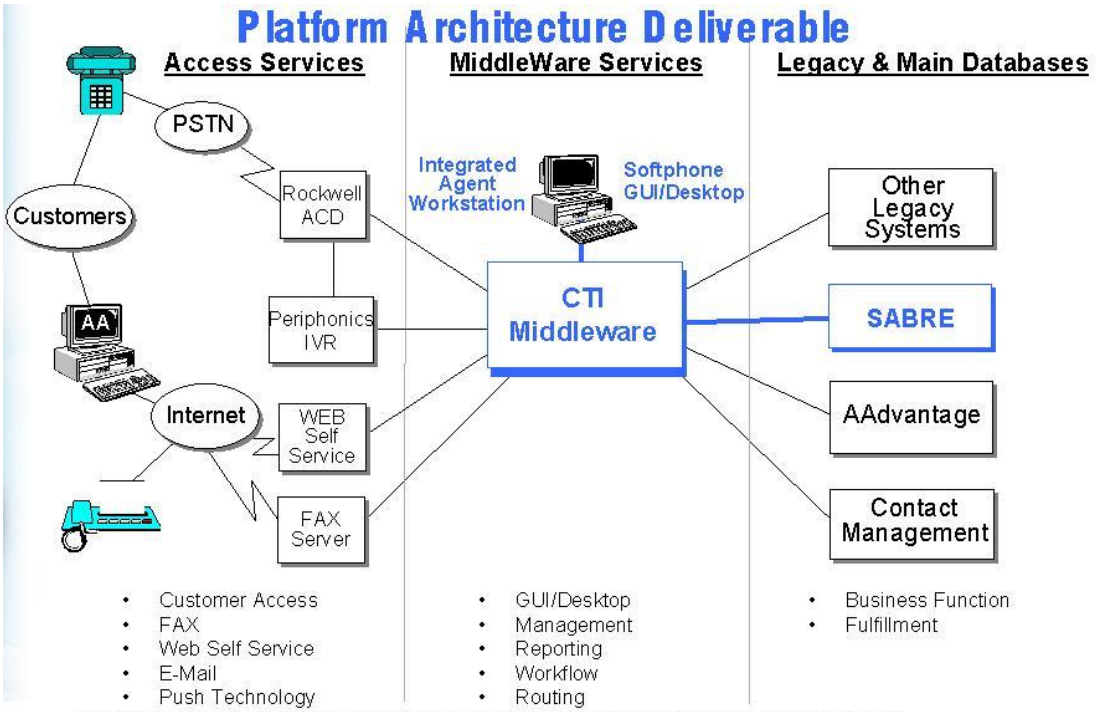
Illustrative Call Analysis- Variance by Type

Platform Architecture Deliverable

- Compile the strategic and short term decisions on the "To Be" architecture platform and environment implementation changes



Illustrative Architecture diagram for the "To Be" environment



Platform Architecture Deliverable

1. Overview
   - Objectives
   - Work done to date
2. As Is Understanding
   - A.As is workflows to consider
   - B. Business Vision and Alignment - Implications to Prototype
   - C. Re-engineering/Best Practice Dependencies for Prototype
   - D. Recommended Evaluation Criteria
3. Survey of Platform Architecture Options
   - A. Translate Vision to Architecture Process
   - B. Identify Options
   - C. Recommend Options to Prototype
4. Prototype Description
   - A. Required Measurements & Parameters
   - B. Evaluation Process
   - C. Prototype outline
     - Scenario/Scripts
     - Components
   - D. Trials/Tests Descriptions
   - E. Data Collection Methods
5. Next Steps
   - A. Prototype Trial Schedule
   - C. Management Acceptance
   - D. Open Issues/Dependencies

Illustrative Table of Contents for "Define Prototype" activity

Platform Architecture Deliverable

- Evaluation of the prototype is based on analyzing the results from the application of three evaluation categories. These evaluation categories are 1) scenario playout, 2) technical analysis, and 3) component integration.

CAPABILITY	MODEL 1	MODEL 2	WEIGHTED
*Basic CTI Technology e.g.: Screen Pop, Call Routing, Conferencing	4	4	3
*Advance CTI Technology e.g.: Web, Email, Intelligent Routing	4	4	3
Market Position	4	3	2
Service/Support	3	4	3
Vision	4	4	2
Cost	3	3	2
Desktop Integration	4	3	3
Legacy Support	3	3	3
PwC Support	4	2	2
Timeline Deliverable	4	3	3
IVR/PBX Integration	3	3	2
WEIGHTED			
UNWEIGHTED	40	36	

***Illustrative** Evaluation matrix to present results of specific measurements against operational prototype*

Strategic Recommendations Deliverable

1. Computer Telephony Integration (CTI)

- ***Company A Key Vision Elements***

Key Vision Element		Inbound	Outbound	Call Center Capability
3.	Incoming calls to the CCC will be automatically routed to the appropriate Customer Service Representative (CSR) based on the customer's line-of-business (LOB) and type of account (e.g. national account) and CSR skill sets. Resource availability and continuity will take precedent. For example, customers who had already placed a call and spoke with CSR X calls back an hour later, phone system automatically identifies the caller, determines if CSR X is available and routes the call, if not available, the call is routed to the next available CSR.	✓		*Calls are routed based on customer information and resource availability*
5	The customer's or prospect's account profile, if available, will be displayed on the CSR's screen before the calls are answered by the CSRs	✓		*Screen pop customer profile for inbound calls*
13.	CSRs will be prompted with on-line scripting to help orchestrate the customer interaction and to ensure that required information is discussed. The script will lead the CSR to determine, price, days of service, inventory, policies, and credit worthiness etc. Telesales, Account Retention and Collections will also have on-line scripting with their respective processes.	✓	✓	*On-line dynamic scripting*
16.	Ability to identify the caller and view service and contact history so as to enhance the intimacy level of customer interactions	✓	✓	*Caller identification*
17.	Customer data screen is transferred along with any phone transfer	✓	✓	*Unified voice and data transfers*

CTI Routing to Most Qualified CSR

- The virtual call center will enable the routing of calls to the most qualified and available CSR to handle a particular customer. For continuity, customers can be routed to the same CSR as on a prior interaction. A central bank of IVRs will be used to accept inbound calls and provide customer identification and processing of some percentage of transactions that do not require CSR interaction. The implications for this capability require a complex interaction of local and remote hardware and software a well as with the provider telephony network.

- ***Key Points***

Provide a centralized call center database facility with selected customer profile information for customer identification and call routing.
Provide a centralized IVR facility to accept and manage the inbound call flow
Provide a network interflow capability that will enable control of call routing within the telephony network among call centers.
Provide routing control with CTI software and fallback routing performed by PCB/ACD interflow.
Monitoring and reporting tools must present an enterprise view of the call center and associated telephony networks, in addition to a micro-level view of individual call centers.
Recognize the profile of the customer for both current and historical service requests using ANI, DNIS or IVR
Segment the customer contact for economic value and appropriate treatment, e.g. national accounts, residential customers, etc
Support integrated, multi-media customer interactions including telephony, IVR, fax, Internet Telephony

Strategic Recommendations Deliverable

Recommendation	Type of Change	Investment Return		Required Investment		Implementation Considerations		Overall Assessment of Opportunity
		Type	Relative Magnitude	Type	Relative Magnitude	Barriers	Risks	
1. Establish business criteria for balancing call loads across ACD queues	S	R	Med.	A=OT	Low	P	—	Med./High
2. Automate employee time tracking	S, I, O	C	Med.	H=OT	Med.	S, O	O	Med.
3. Play message to instruct callers, particularly during HOLD times	S	C, L	Low	A=OT	Low	S	—	Low
4. Use IVR to triage calls to ensure that customers are directed to the appropriate resource	O, P, S	L, R	Med.	A=OT, RC H=OT, RC	High	A, O	ST	Med.
5. Explore features offered by telephony carriers for load balancing across call centers	S, P	L, R	Med.	A=OT	Med.	S, O	—	Med.
6. Revise manual order entry form	P, O	R, L	Low	A=OT, H=OT	Low	I, S, P	—	Low
7. Identify opportunities for revising financial information for management of Customer Operations	I	C	Med.	A=OT	Med.	I, O	—	Med.

Key: S = Systems (Technology); O = Organization; P = Process; I = Information (Data); C = Cost reduction; L = Service level; R = Revenue; H = Human Resources; A = Capital; RC = Recurring; OT = One time; ST = Strategy change

Strategic Recommendations Deliverable

As shown below, the required investment is relatively low as many of the measures today are already collected. Existing measures in place should be reviewed for relevancy and eliminated if found they have no bearing or adverse impact on performance.

Required Changes	Required Investment	Barriers/Risks	Mitigating Factors
• Must plan, collect, track and report metrics	• Moderate	• Transition from manually-generated to automated production can be difficult	• Upgrading to enhanced version of TCS software with options would assist in collecting and reporting the metrics
• Must explain movements (aberrations or positive shifts) in metrics to management - require root cause analysis techniques	• Minor	• Performance measures may be misused/exploited to justify sub-optimal actions	• Existing management review process will limit potential misuse or misinterpretation
• Training and ongoing management initiative to use and show value of metrics must be evident throughout all levels of Customer Operations	• Minor	• Commitment of management to invest in time/effort to reinforce concepts may not be sustainable	• Create metric review and explanation as part of management review meetings within department
• Review of existing measures to determine applicability to performance objectives	• Minor	• Measures in place may affect budgeting considerations but not performance. Removal might be complex	• Reduction in measures would include reduction in effort to collect and report information of questionable use

Business Case Deliverable

- Example analysis for business case from the call analysis which determines costs which can be avoided from preventing non-value calls by improved service or through self-service.

Preventable Calls	Number of Calls	Annualized # of Calls	Unit Cost	Cost Estimate
Incorrect Orders				
- Business Unit A	5,292	112,014	$25	$2,800,350
- Business Unit B	2,070	43,815	$50	$2,190,750
- Business Unit C	307	6,498	$50	$ 324,900
Incorrect Orders	7,669	162,327		$5,316,000
Order Status	2,443	51,710	$1.73	$ 89,458
Complaints	3,133	66,315	$1.73	$ 114,725
Billing Questions	5,603	118,597	$1.73	$ 205,172
Non-Customer	9,604	203,285	$1.73	$ 351,683
Total	**28,452**	**602,234**		**$6,077,038**

Potential of preventing calls: 50% - Annual Savings = $3,000,000
One Time Implemenation Costs: $1,000,000
Payback: <12 months

10.2 Example Testing Stages and Test Activities

Owner: Process Owners

Acceptance Criteria & Test Plans

To ensure a rapid acceptance process, clear criteria for acceptance will be identified prior to both pilots. Detailed test scenarios will be developed to ensure end users are highly productive in exercising all components of the system. Functional and performance tests will be included in these plans.

Owner: Project Manager & Deployment Lead

Production Pilot Cutover & Support Plan

The pilots will need the same installations, setups, training and support as a full scale production rollout, just on a smaller scale. A detailed step-by-step cutover plan will be developed and managed. User support will also be put in place to provide technical and functional assistance.

Owner: Deployment & Core Development Leads

Production Pilot Design Changes

All feedback from the external production pilot will be cycled back into an iterative design and development process. All changes will be re-tested and accepted by the users. Formal sign-off processes will be required prior to production release.

Owner: Process Owners

Sales Organization Formal Sign-off

Key end users will be required to formally sign off on all working applications. They will be required to confirm that project objectives will be met if these applications and processes are properly implemented.

During the testing, the major objectives are to verify the system readiness against business features and performance requirements and to obtain system acceptance before the final production rollout.

The following tasks are completed during this stage:

- Functional tests – The functional or business flow test applies to conversion, screen configurations, and custom programs. This test focuses on verifying the entire transaction workflow and that the data is correctly captured and reported. It traces single transactions through the entire system and validates the accuracy and timeliness of data. These tests should be designed to model real application user processes and scenarios.
- System performance tests – Performance tests focus on verifying system response times against predefined key performance indicators. The objective is to confirm that the system meets established service level agreements and to develop overall system performance baselines to measure against as the system is deployed in production.
- Training – Prior to production deployment, users as well as the support team undergo training.
- Implementation of pilot feedback – The project team implements feedback prior to production.
- Production support infrastructure – After pilot production and prior to production rollout, customers and PWC work together to design and implement a production support infrastructure, including help desk and operations.

During implementation, all module integration and system performance tests are conducted as part of the user pilot deployment. This approach has the advantage of providing "real-life" system usage scenarios. The information gathered can then be utilized to better extrapolate system performance characteristics for the larger user rollout. This approach requires strong pilot user and management commitment to provide feedback and proactive communication between the development team and pilot users.

Depending on the number of feedback and development enhancement iterations desired prior to rollout, this stage may be completed in one to three months.

TESTING TASKS

During testing, the major objectives are to verify the system readiness against business features and performance requirements, ready for system acceptance testing before the final production rollout.

The following tasks are completed during this stage:

1. FUNCTIONAL TESTS

The functional or business flow test applies to conversion, screen configurations and custom programs. This test focuses on verification of the entire transaction workflow and that the data is captured and reported correctly. It traces single transactions through the entire system and validates the accuracy and timeliness of data. These tests should be designed to model real application user processes and scenarios.

2. SYSTEM PERFORMANCE TESTS

- Performance tests focus on verifying system response times against pre-defined key performance indicators. The objective is to confirm that the system meets established service level agreements, and to develop overall system performance baselines to measure against as the system is deployed into production.

- User training may occur during this stage
- Training and knowledge transfer for support team
- Production System Test deployment, which involves:
- Installing and configuring hardware and software components
- Configuring Siebel parameters
- Running data conversion/import for pilot users
- Defining territories
- Defining employees
- Running initial Opportunity Assignment
- Registering mobile users
- Enable transaction logging (Docking)
- Start Log Manager (Docking)
- Run Database Extract for new mobile users (Docking)
- Training for new end users
- Initialize mobile clients (Docking)
- Implementation of pilot feedback
- Production support infrastructure: Help Desk and Operations

During implementation, all module integration and system performance tests are conducted as part of the system testing stage. This approach may use "real-life" system usage scenarios. The information thus gathered can then be utilized to better extrapolate the system performance characteristics for the larger user rollout. This approach requires strong "pilot user" and management commitment to provide feedback and pro-active frequent communication between the development team and pilot users.

Depending on the number of feedback and development enhancement iterations desired prior to rollout, this stage may be completed between 1 to 3 months.

3. SYSTEM TESTING

All the elements of the implementation must come together to transition successfully. During this stage, end users may be trained while the technical team completes the final configurations and tuning of the production environment and converts data.

The following are examples of tasks completed during this project stage:

- Verify hardware and database sizing
- Refine or complete configuration of Siebel parameters
- Run data conversion/import for the next set of users
- Define new territories
- Define new employees
- Tune database
- Run Opportunity Assignment
- Register new mobile users
- Training for new end users
- Enable transaction logging (Docking)
- Start Log Manager (Docking)
- Run Database Extract for new mobile users (Docking)

- Initialize mobile clients (Docking)
- Refine production support infrastructure for larger set of users/functionality
- Final acceptance test

10.3 PWC Projects Quality Reviews

Each phase of the project includes a review for quality assurance. This review evaluates the project's success meeting customer requirements and adherence to standards and policies. The quality assurance review (QAR) committee consists of three to five experienced personnel from disciplines specific to the project type and phase of the project who are not project team members.

The QAR team request copies of the deliverables for each phase of the project, the project plan, and working papers for the project. Their purpose is not grading or evaluation, but assistance and objective review before deliverables are given to the customer.

The QAR team will prepare a written, one-page summary of that phase of the project -- specifically, the phase deliverable(s) in respect to customer requirements and published PWC PSF standards.

In addition, all projects over $200,000 per month in billings for two or more consecutive months or Fixed Price projects undergo a quarterly Project Quality Review (PQR) by an external committee of PSF staff including the associated geographic PMO manager. The PQR assesses adherence to published PWC PSF quality standards and good business standards. It is the responsibility of the project manager to schedule these reviews with the PWC PSF PMO organization.

10.4 Sample Resumes

Hans Herber:

Background	Mr. Herber has over 18 years of managerial and consulting experience in large, multi-site call center operations. Industry background includes thirteen years in the commercial airline industry. Project involvement includes service strategy development, call center design, process reengineering, organizational effectiveness, performance improvement and project management.
Selected Engagements	Conducted a call center *Best Practices* study for the inbound customer service and sales division of a major communications company. The scope of the project included an analysis of available technology with the potential to enable improvement in process and customer satisfaction, while decreasing cost. Performed a comprehensive review of the call center processes of a multinational travel company. The project included a review of the forecasting, scheduling, load balancing, resource allocation and intra-day operation management practices. Planned, coordinated, and managed the data gathering, analysis, recommendation and presentation phases of a Customer Care Diagnostic for a global financial services company. The project involved 6 call centers with 2,000+ agent positions and provided strategic direction for a pending merger that incorporated the *Best Practices* of two distinct corporate cultures. Industry experience includes the position of Director, Call Center Operations and Planning, for Continental Airlines. Responsible for the day-to-day operations of nine call centers. Designed, implemented and managed a Network Operations Center responsible for load balancing, resource allocation and internal performance monitoring and reporting.
Professional History	PricewaterhouseCoopers: Principal Consultant, 1997 to present AT&T: Call Center Consultant, 1993 to 1997 Continental Airlines: Director Call Center Operations and Planning, 1987 to 1993 New York Airlines: Director Call Center Operations, 1984 to 1987 Manager Call Center Operations, 1980 to 1984
Education	M.S., Sports Management, University of Massachusetts B.A., European History, Providence College

Beauford (Bud) Jordan

Background

Mr. Jordan has over 26 years of technical experience including over 15 years of call center development experience. Mr. Jordan has extensive industry experience in the telecommunication and commercial airline industries.

Selected Engagements

Developed call center software applications as a call center business process optimization consultant. Included assessments of the following: telephone equipment requirements, call routing, call center metrics and metrics goals, work volume forecasts, staffing projections, staff schedules, workstation applications, work space, employee change management seminars, and union labor issues related to change.

Managed support engineers as the Western Region Communications Team Leader at American Airlines. Involved with maintaining all voice and data circuits coming into and going out of reservation hub.

Telecommunications experience includes software maintenance of AT&Ts Long Distance switching network, implementation of (800) service, and implementation of the first 5ESS platform.

Holds patents for the design of software products enabling call center managers, supervisors and agent to review metrics and schedules. The process enforces proactive planning, interim analysis, day-of analysis with staffing decision tools, results generation and delivery analysis.

Professional History

PricewaterhouseCoopers:	Principal Consultant, 1997 to present
Teknekron/IEX:	Senior Call Center Consultant, 1983 to 1997
Datapoint:	Manager Field Systems Engineering, 1979 to 1983
American Airlines:	Western Region Communications Manager, 1977 to 1979
Rockwell:	Switching Systems Manager, 1976 to 1977
AT&T:	Long Lines Network Programmer, 1972 to 1976

Education

B.S., Computer Science, University of Maryland

Josh Fishman

Background

Following graduation from Purdue School of Engineering, Mr. Fishman served as a management consultant for the newly formed AT&T Solutions Consulting Practice. During two years as a consultant with AT&T, he performed several multi-phase engagements with Global 2000 clients focusing on business process reengineering and technology enhancements in the field of call centers and customer value management.

Selected Engagements

Conducted call center operational assessment and process mapping to identify potential high value Computer-Telephony Integration (CTI) applications for a major domestic airline. Constructed models to analyze the potential cost reduction and revenue generation opportunities enabled through CTI as well as upgrading existing ACD technology. Performed detailed cost/benefit analysis for solution implementation. Designed creative call routing strategy to maximize cost/benefit of technology investments. Developed high level implementation plan and technology architecture for client/server CTI solutions and ACD investments.

Developed analytical telecommunication models to determine financial and customer retention impact of call blocking across reservation centers. Managed workstream designed to forecast impact of process improvements on human resource requirements using TCS Workforce Management Software. Performed detailed cost/benefit analysis for solution implementation. Constructed implementation plan for process reengineering initiatives and technology investments.

Developed financial and operational models for customer and market sizing forecasts. Performed competitive benchmarking study to identify gaps in service delivery and technology infrastructure required to enable strategic initiatives. Constructed models to assess feasibility of potential service offerings and identified gap closure solutions for high potential applications. Assisted Systems Integration team in design of client/server technology architecture and desktop software solutions to support emerging service offerings.

Professional History

PricewaterhouseCoopers:	Consultant, 1998 to present
AT&T Solutions Consulting Practice:	Consultant, 1996 to 1998

Education

B.S., Industrial Engineering, Purdue University

Robert English

Background	Mr. English has over 10 years experience managing and consulting in the area of customer support where he been directly involved in numerous call center performance improvement projects. His professional experience includes business process re-engineering, call center operations evaluation and technology assessment and implementation.	
Selected Engagements	Conducted Call Center Best Practices study of the help desk industry that included benchmark comparisons of people, process and technology performance measures.	
	Managed a call center technology selection process that included Private Branch Exchange (PBX), Automatic Call Distributor (ACD), Interactive Voice Response (IVR), Knowledge Base, Workforce Management, Computer Telephony Integration (CTI), Customer Asset Management (CAM) and Web.	
	Led a process re-engineering effort that applied cross-industry best practices and established performance benchmarks for the call center division of a large information services company.	
Professional History	PricewaterhouseCoopers:	Principal Consultant, 1998 to present
	ENTEX Information Services:	National Director Help Desk Services, 1996 to 1998
	FocIS Corporation:	President, 1994 to 1996
Education	A.S., Business Administration Computer Science, Panama Canal College	

Leo Wisniewski

Background	Mr. Wisniewski is a senior project manager and technical architect with 15 years of experience in designing and implementing customer management systems and technical infrastructures. His project management experience includes managing teams of up to 50+ people and budgets up to $20,000,000.	
Selected Engagements	Project Manger and Lead Technical Architect for the 1998 Inbound Call Center Management conference CALLcenterLIVE project. CALLcenterLIVE, a working call center, showcases the products from over 20 industry leading call center vendors in a world-class setting. The CALLcenterLIVE showcase will be the centerpiece of the ICCM '98 conference.	
	Team Leader - Operations & Management Team for a $50 million Fortune 500 waste management services firm to support the implementation of a large scale SAP system and a world-class integrated call center. Implementation also included a comprehensive System Management framework along with a support set of operational processes and procedures.	
	Team Leader Technology Integration Team for a fortune 500 industrial products firm. Charter included technical infrastructure design and selection of components to support an SAP and Data Warehousing implementation.	
Professional History	PricewaterhouseCoopers:	Principal Consultant, 1997 to Present
	Miller Brewing Company:	Information Technology Director - Sales & Marketing, 1989 to 1997
	Firstar Bank:	Systems Analyst, 1983 to 1989
Education	M.B.A., Marquette University, Milwaukee, Wisconsin B.A., St. Norbert College, DePere, Wisconsin	

Michael Herman

Background

Mr. Herman has over 10 years across a wide range of technologies including call center application development, integrating database, web and object-oriented technologies. He is a senior technical architect practitioner for the Market and Customer Management practice with both design and hands-on development expertise.

Selected Engagements

Architected large-scale call center application that includes package software, WWW integration, CTI and legacy systems.

Worked as a technical lead to prepare a detailed evaluation of several enterprise, point, and custom solution options. Each solution was rated against business drivers, IT drivers, viability, vision, and cost.

Made "Production Ready" an Encina-based session manager that operates between IIS and an NT-based Java application server. Developed a Windows 32 bit COM wrapper for the HP Praesidium Unix-based Enterprise Authorization Server.

Professional History

PricewaterhouseCoopers:	Principal Consultant, 1997 to Present
BSG Alliance/IT, Inc.:	Senior Technical Manager, 1996 to 1997
Meigher Communications, L. P.:	Technology Director, 1996
Prodigy Services, Inc.:	Manager, Games Development, 1995 to 1996
Compton's NewMedia, Inc.:	Director, Advanced Technology, 1992 to 1995

Education

Achieving BS in Liberal Arts with a concentration in Math from Regents College, NY

Asanee Isarowong

Background

Mr. Isarowong has over five years of Information Technology experience, including Call Center technology and system installation using Genesys product suite and Lucent technologies equipment. Custom Client/Server skills include Windows 3.1x, 95 on Netware and Windows NT Server as well as SCO UNIX using Visual Basic V, Access 2.0 and 95, UNIX script, and SQL languages against the Oracle 7.x database and Sybase. Experience on open systems engagements also includes the operating system HP-UX and Solaris on a Ethernet and Token Ring LAN as well LAN/WAN architecture, planning, and installation.

Selected Engagements

Information Technology Specialist during the analysis and design phase work at a major telecommunication company. Responsible for defining requirements, gap analysis and development of the call center and call management system. Extensive work with the Genesys Call Management product suite and Lucent communication switches, including the G3Si PBX/ACD.

Technical Specialist on the Technical Architecture Team for a Greenfield oil refinery in Map Ta Phut, Thailand. Responsible for setting up the technical infrastructure, development of interfaces, functional and technical training of client resources, migration of the application to a production environment, helpdesk architecture, implementation and post implementation application support. Supervised multiple vendors to complete physical network installation and the technical resources on the Data Reconciliation Team that implemented the KBC Sigma Fine product suite.

Technical Specialist for a custom client/server system installation of the Oacis Healthcare product suite. The engagement spanned the complete product development life cycle including detail analysis and design, programming, testing, and training using message definition and translation language, UNIX and SQL scripting.

Professional History

PricewaterhouseCoopers:	Senior Consultant, 1997 to present
Andersen Consulting:	Senior Consultant, 1995 to 1997 Consultant, 1993 to 1995

Education

B.S., Computer Science / Engineering, University of Illinois, Urbana-Champaign

Casey Atchison

Background

Mr. Atchison has 5 years experience with computer networks and custom software development and three years experience in call center technologies and database related functions. Functional expertise with ACD administration, IVRs, network routing, vendor management, and personnel management systems all primarily in the cable industry. Leadership experience with supervision of up to 7 consultants and users.

Selected Engagements

Currently implementing and testing a working call center for an international trade show. Over 20 separate vendor products are being integrated including voice and web communication, IVR functions, voice & speech recognition, CTI and SFA software.

Designed and implemented a call center template for a multi-site customer. Built two call centers to this template and retrofitted four existing ones. Responsibilities included project management of ACD, QA, and TCS installation teams, senior ACD programmer, coordinated IVR/ACD development, AT&T network routing programmer, custom report development, and technical evaluation of new call center technologies.

Developed custom software systems for a large digital TV satellite company. Administrated all telecom systems for their 300+ seat call center. Designed and managed all telecom related software projects including ACD programming, IVRs, reporting, and network routing.

Professional History

PricewaterhouseCoopers:	Consultant, 1998 to present
TCI, Advanced Information Technology Group:	Call Center Engineer, 1996 to 1998
Primestar by TCI:	Applications Programmer, 1995 to 1996

Education

Aspect Call Center Applications Design Workshop, Advanced
PeriProducer in the VSP/is Environment for Programmers
Routing Control Service On-Line
B.S., Computer Science, Mesa State College, Grand Junction Colorado

Kevin Schwartz

Background

Mr. Schwartz has over 12 years of experience managing projects ranging from strategic planning to large scale implementations. Mr. Schwartz is also the co-author of the PricewaterhouseCoopers Information Technology Infrastructure Methodology.

Selected Engagements

Partner in charge of a large inbound Call Center Management integration project. This project involves the integration of nearly twenty leading call center hardware, software, and facility products and vendors to build a world-class working call center. This working call center will be the central showcase attraction at the ICCM show in September, 1998.

Managed the definition, design, and implementation of a complete client/server infrastructure to support a large-scale SAP implementation project, including an integrated world class call center, for a $10 billion Fortune 500 company. Also defined and implemented a complete set of operations and management tools to be used by the client to support the environment.

Managed a Strategic Information Systems Planning project for a multi-billion dollar chemical company. Reviewed the clients existing business processes, applications, technologies, and IS organization. Identified opportunities for IS improvements (e.g., implementation of best practices, standardization, simplification) to increase synergy across their business units and better manage and operate the enterprise through improved information quality and access.

Managed a global technology infrastructure strategy definition project for a multi-billion dollar multi-national consumer and commercial credit corporation. Defined a set of global technology architecture standards and formal processes to support IS project compliance with the standards and to provide on-going maintenance and communication of the strategic technology direction.

Professional History

PricewaterhouseCoopers:	Partner, 1998 to present
Price Waterhouse:	Principal Consultant, 1994 to 1998
Andersen Consulting:	1986 to 1994

Education

B.S., Computer Sciences, Rensselaer Polytechnic Institute

Howard Kline

Background	Mr. Kline has extensive technical and sales experience. His focus of technical expertise is in the area of contact / call center technologies to enable customer service and retention. He has the ability to guide clients in the planning and implementation of call center design, Computer Telephony Integration (CTI), Internet enablement, and vendor and product positioning and acquisition. Mr. Kline has held positions of technical consultant and project manager on several large customer service consulting engagements before joining PW. Has actively participated in industry trade shows and executive briefings when with Gartner Group. Sales experience includes sizing opportunity and responding to RFPs
Selected Engagements	Consultant/advisory to Fortune 500 in call center /customer service. Predominant industry experience includes financial services, insurance, retail and utilities including telecom. Managed projects in the area of customer service for large telecom and utility company. Also served as JAD leader and technical architect
Professional History	PricewaterhouseCoopers: Principle Consultant, 1998 to present Gartner Group: Senior Analyst, 1994 to 1998 IBM, Systems Engineer, Sales: Consultant, 1985 to 1994 Dean Witter Reynolds, Systems: Communication Programmer, 1979 to 1985
Education	M.A., Philosophy, University of Pennsylvania, Philadelphia B.A., Social Science, University of Hartford, Hartford Technical education includes classroom training in networking and system software

Steve LaValle

Background	Mr LaValle has over 9 years of consulting and industry experience primarily to the direct marketing and retailing industries and is a frequent speaker at industry events. He is experienced in marketing, product development, inventory control, call center, distribution and logistics management functions. As a consultant, Steve typically is involved with service and marketing strategy development or functional process design/improvement projects that also include a systems review.
Selected Engagements	Project manager and subject matter expert for a $350 million gift cataloger to develop a service leadership vision. Identified capabilities, management strategy, best practices and cross-industry service benchmarks. Identified "To Be" state in conjunction with client that incorporated appropriate best practices. Recommended and prioritized system enhancements, functional roles and process improvements for call center, fulfillment center and marketing departments. Project manager and subject matter expert Excellence for a leading Canadian consumer products company in evaluating the service strategy and existing plans to introduce a Customer Service Center of. Applied service best practices and benchmarks. Assessed service goals relative to existing business strategy, existing service delivery capabilities and fit with culture. Defined key roles and responsibilities, simplified reporting and approval processes, and created approach to implementation. Effort resulted in 40% reduction in cycle time and $12 million in process savings. Managed operational start-up of high-service catalog for a joint venture between a major magazine publisher and a major retail corporation. Designed inbound telemarketing/customer service center for managing customer contact and fulfillment center for processing orders. Selected catalog management system and oversaw implementation. Operations received a 98.5% level of high customer satisfaction.
Professional History	PricewaterhouseCoopers: Principal Consultant, 1996 to Present A.T. Kearney Management Consulting Services: Associate, 1995 to1996 Chadwick's of Boston, Ltd: Manager, 1992 to1995 Ayer Advertising, Inc: Manager of Creative Production, 1989 to 1990 Associate, 1987 to 1989
Education	M.B.A., General Management and Strategy, Harvard Business School B.S., Economics in Finance and Management, Wharton School, University of Pennsylvania

Mark Jacobs

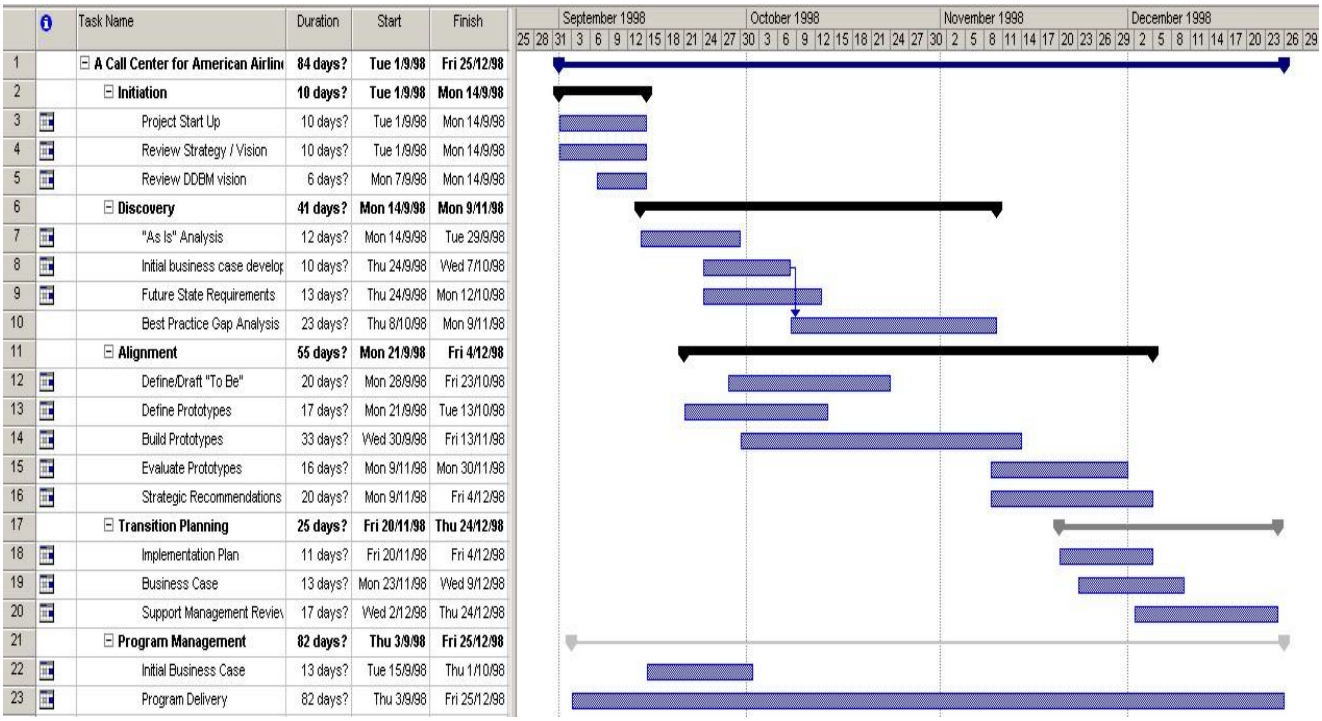
Background	Mr. Jacobs has over 13 years of extensive experience in full life cycle custom and package system implementation and integration for call centers and customer service. Well-versed in multi-site call center operations analysis, call center process re-engineering, call center technologies and application systems, sales force productivity applications and fulfillment operations (direct mail, mail order distribution). He is the Mid-West Region call center system integration leader of the Market and Customer Management practice.
Selected Engagements	Project Director for a call center and relationship marketing operations review and software selection for a large consumer products concern. Project Manager for Siebel Enterprise implementation in a call center with relationship marketing integration for one of the Big 3 automotive manufacturers. Project Lead for a call center definition project for a Fortune 100 services company looking to consolidate customer service functions and establish new business processes along with their roll out of SAP. Project Director for a Call Center Diagnostic, service vision and distribution assessment project for a medium sized mail order cataloger. Project Lead for an assistance project to establish program management methods and techniques for the company-wide re-engineering project of a Fortune 500 high-tech manufacturer. Project Manager for several consecutive full system life cycle systems projects involving a custom, client-server call center and customer service application for a Fortune 50 computer manufacturer. Cycles involved product definition, development, performance & capacity testing and roll out to the 22 site implementation. Largest implementation involved a 1,000 agent big-bang roll out to five sites.
Professional History	PricewaterhouseCoopers: Principal Consultant, 1995 to present Manager, 1992 to 1995 Smith International, Inc.: Manager, Applications Development - International Systems, 1990 to 1992 Andersen Consulting: Experienced Senior Consultant, 1985 to 1990
Education	M.B.A., Baylor University, Waco, Texas B.A., University of Wyoming, Laramie, Wyoming

Dan Hirschbuehler

Background	Mr. Hirschbuehler has over 16 years of experience in Information Technology engagements involving all phases of the systems development life cycle specifically in the areas of systems planning, requirements definition, analysis, design, development and systems implementation. Clients include transportation companies, financial institutions, healthcare insurance companies, distribution companies, and other private sector clients.
Selected Engagements	Project partner for the design and implementation of a large scale re-engineered worldwide reservations/order management system for a billion dollar cruise line. The system processed high-volume on-line "orders", billing, accounts receivable, pricing/promotions, inventory control and airline management functions. The system is constructed on multiple AS/400s using DDM, MIMIX and local users and 15,000 travel agent worldwide. The system was prototyped using a client/server architecture. Project partner for the design and implementation of an order management application for a transportation company. Project manager responsible for the custom system development of a "back office" accounting system for a national travel agency. This system interfaces with airline reservation systems, performs A/R, A/P and G/L functions and prints airline tickets and boarding passes in an IBM AS/400 environment. Project manager of the system development team responsible for the design, development and implementation of the inventory control systems for a newly formed company in the automotive industry to track inventory movement, adjust inventory on-hand quantities and support cycle and annual physical inventory reviews. Project manager for the systems development project for a major regional commercial bank responsible for modifying the commercial loans and management reporting systems to accommodate approximately $5 billion in non-performing loans.
Professional History	PricewaterhouseCoopers: Partner, 1990 to present Manager, 1985 to 1990 Consultant, 1982 to 1985 McDonnell Douglas Corporation: 1977 to 1980
Education	M.S., Engineering Management, University of Missouri B.S., Computer Science, University of Missouri

10.5 Implementing into Microsoft Project

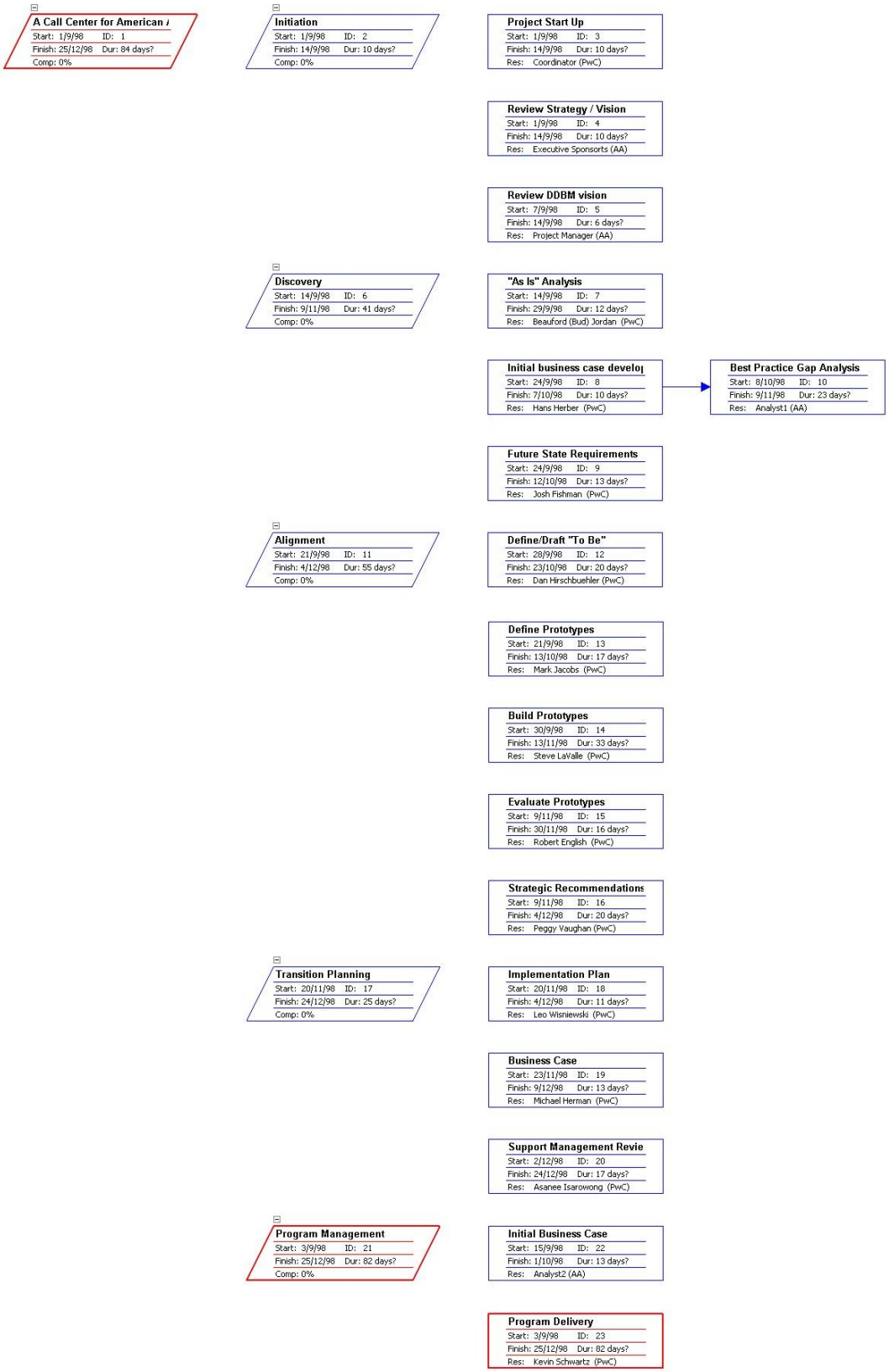
Gantt charts only represent part of the triple constraints of projects, because they focus primarily on schedule management. Moreover, Gantt charts do not represent the size of a project; therefore the magnitude of a behind-schedule condition is easily miscommunicated. If two projects are the same number of days behind schedule, the larger project has a larger impact on resource utilization, yet the Gantt chart does not represent this difference.



	Task Name	Duration	Start	Finish
1	**A Call Center for American Airlin**	**84 days?**	**Tue 1/9/98**	**Fri 25/12/98**
2	**Initiation**	**10 days?**	**Tue 1/9/98**	**Mon 14/9/98**
3	Project Start Up	10 days?	Tue 1/9/98	Mon 14/9/98
4	Review Strategy / Vision	10 days?	Tue 1/9/98	Mon 14/9/98
5	Review DDBM vision	6 days?	Mon 7/9/98	Mon 14/9/98
6	**Discovery**	**41 days?**	**Mon 14/9/98**	**Mon 9/11/98**
7	"As Is" Analysis	12 days?	Mon 14/9/98	Tue 29/9/98
8	Initial business case develop	10 days?	Thu 24/9/98	Wed 7/10/98
9	Future State Requirements	13 days?	Thu 24/9/98	Mon 12/10/98
10	Best Practice Gap Analysis	23 days?	Thu 8/10/98	Mon 9/11/98
11	**Alignment**	**55 days?**	**Mon 21/9/98**	**Fri 4/12/98**
12	Define/Draft "To Be"	20 days?	Mon 28/9/98	Fri 23/10/98
13	Define Prototypes	17 days?	Mon 21/9/98	Tue 13/10/98
14	Build Prototypes	33 days?	Wed 30/9/98	Fri 13/11/98
15	Evaluate Prototypes	16 days?	Mon 9/11/98	Mon 30/11/98
16	Strategic Recommendations	20 days?	Mon 9/11/98	Fri 4/12/98
17	**Transition Planning**	**25 days?**	**Fri 20/11/98**	**Thu 24/12/98**
18	Implementation Plan	11 days?	Fri 20/11/98	Fri 4/12/98
19	Business Case	13 days?	Mon 23/11/98	Wed 9/12/98
20	Support Management Revie	17 days?	Wed 2/12/98	Thu 24/12/98
21	**Program Management**	**82 days?**	**Thu 3/9/98**	**Fri 25/12/98**
22	Initial Business Case	13 days?	Tue 15/9/98	Thu 1/10/98
23	Program Delivery	82 days?	Thu 3/9/98	Fri 25/12/98

The file is available upon request

A project network is a graph (flow chart) depicting the sequence in which a project's terminal elements are to be completed by showing terminal elements and their dependencies. The work breakdown structure or the product breakdown structure show the "part-whole" relations. In contrast, the project network shows the "before-after" relations.


A Call Center for American /
Start: 1/9/98 ID: 1
Finish: 25/12/98 Dur: 84 days?
Comp: 0%
Initiation
Start: 1/9/98 ID: 2
Finish: 14/9/98 Dur: 10 days?
Comp: 0%
Project Start Up
Start: 1/9/98 ID: 3
Finish: 14/9/98 Dur: 10 days?
Res: Coordinator (PwC)
Review Strategy / Vision
Start: 1/9/98 ID: 4
Finish: 14/9/98 Dur: 10 days?
Res: Executive Sponsorts (AA)
Review DDBM vision
Start: 7/9/98 ID: 5
Finish: 14/9/98 Dur: 6 days?
Res: Project Manager (AA)
Discovery
Start: 14/9/98 ID: 6
Finish: 9/11/98 Dur: 41 days?
Comp: 0%
"As Is" Analysis
Start: 14/9/98 ID: 7
Finish: 29/9/98 Dur: 12 days?
Res: Beauford (Bud) Jordan (PwC)
Initial business case develo
Start: 24/9/98 ID: 8
Finish: 7/10/98 Dur: 10 days?
Res: Hans Herber (PwC)
Best Practice Gap Analysis
Start: 8/10/98 ID: 10
Finish: 9/11/98 Dur: 23 days?
Res: Analyst1 (AA)
Future State Requirements
Start: 24/9/98 ID: 9
Finish: 12/10/98 Dur: 13 days?
Res: Josh Fishman (PwC)
Alignment
Start: 21/9/98 ID: 11
Finish: 4/12/98 Dur: 55 days?
Comp: 0%
Define/Draft "To Be"
Start: 28/9/98 ID: 12
Finish: 23/10/98 Dur: 20 days?
Res: Dan Hirschbuehler (PwC)
Define Prototypes
Start: 21/9/98 ID: 13
Finish: 13/10/98 Dur: 17 days?
Res: Mark Jacobs (PwC)
Build Prototypes
Start: 30/9/98 ID: 14
Finish: 13/11/98 Dur: 33 days?
Res: Steve LaValle (PwC)
Evaluate Prototypes
Start: 9/11/98 ID: 15
Finish: 30/11/98 Dur: 16 days?
Res: Robert English (PwC)
Strategic Recommendations
Start: 9/11/98 ID: 16
Finish: 4/12/98 Dur: 20 days?
Res: Peggy Vaughan (PwC)
Transition Planning
Start: 20/11/98 ID: 17
Finish: 24/12/98 Dur: 25 days?
Comp: 0%
Implementation Plan
Start: 20/11/98 ID: 18
Finish: 4/12/98 Dur: 11 days?
Res: Leo Wisniewski (PwC)
Business Case
Start: 23/11/98 ID: 19
Finish: 9/12/98 Dur: 13 days?
Res: Michael Herman (PwC)
Support Management Revie
Start: 2/12/98 ID: 20
Finish: 24/12/98 Dur: 17 days?
Res: Asanee Isarowong (PwC)
Program Management
Start: 3/9/98 ID: 21
Finish: 25/12/98 Dur: 82 days?
Comp: 0%
Initial Business Case
Start: 15/9/98 ID: 22
Finish: 1/10/98 Dur: 13 days?
Res: Analyst2 (AA)
Program Delivery
Start: 3/9/98 ID: 23
Finish: 25/12/98 Dur: 82 days?
Res: Kevin Schwartz (PwC)