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Cost Estimation for Legacy IT Systems

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PRICE

Agenda

- > NAVY Functional Area Manager (FAM) IT Rationalization Process
- > Navy Marine Corps Intranet
- > Legacy Logistics IT Management Restructuring
- > Cost Estimation Requirements
- > Cost Estimation Solution
- > Funding Realignment

NAVY Functional Area Manager (FAM) IT Rationalization Process

> Objectives:

- Achieve Navy-mandated IT footprint reductions; includes number of applications, servers, networks and people
- Reduce redundant systems
- Improve mission performance
- Facilitate move to *Navy Marine Corps Intranet (NMCI)* and Enterprise Resource Planning systems
- Realize cost savings

> Approach:

- Navy designated 24 IT Functional Area Managers
- Aggressively identify and reduce Legacy IT footprint and associated budgets during budget cycle
 - Develop Legacy Network/Server/Apps IT budget estimate
 - Engage commands to verify budgets, identify sources of savings, and potential offsets
 - Return savings to commands (incentive)
 - Coordinate approach and budget actions with Navy's Budget Office
 - Implement enterprise licensing
 - Ensure reductions are meaningful – raw numbers may not be best metric

NAVY Functional Area Manager (FAM) IT Rationalization Process

- > Improved Security
 - Eliminate those systems, servers and applications that are vulnerable to attack
- > Enhanced Interoperability
 - Eliminate those systems and applications that do not comply with military standards in order to achieve interoperability throughout the Navy and with other services
 - Adopt those systems and applications that best serve the needs of the Navy and the other services
 - Align with Department of Defense enterprise architecture
- > Return on Investment
 - Eliminate systems and applications with duplicative functionality
 - Make use of enterprise licensing and economies of scale
 - Eliminate or modify those applications and systems that are not compatible with a service orientated architecture

Navy Marine Corps Intranet (NMCI)

- > The Navy Marine Corps Intranet (NMCI) provides the Department of the Navy with a full range of network-based information services on a single, enterprise-wide intranet
 - Navy outsources IT management to a single contractor in a fee-for-service model
 - Pricing is primarily based on a per-seat (or per-computer) model
 - Fees for additional services, such as classified connectivity, mission-critical service, and additional user accounts apply
 - Improves security across the enterprise
 - Centralizes information technology budgeting and expenditures for the Department of the Navy

Future NAVY IT Considerations

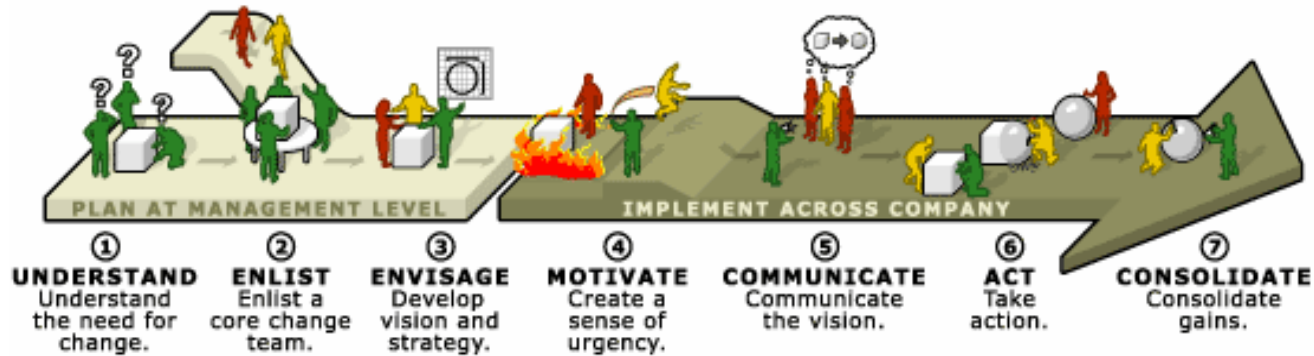
- > Enterprise Resource Planning (ERP)
 - An organizational management system that integrates all facets of it business
 - Several pilot programs are currently underway
 - Integration of data and systems leading to better decision-making, centralized administrative activities, and improved productivity

- > FORCEnet Concept
 - Networking decision makers and supporting warfighting and business enterprises at all levels
 - NMCI is a component
 - Catalyst for naval transformation

Legacy Logistics IT Management Restructuring

- > Logistics FAM is restructuring the management of legacy IT systems
- > Goal is to reduce Logistics IT systems to achieve the most efficient and effective level of mission support
- > Management through an 'Umbrella' concept wherein a logical grouping of related or redundant IT systems is managed through one IT portfolio
- > IT Portfolio Managers (PM) have been identified to lead the consolidated IT portfolio

Legacy Logistics IT Management Restructuring



“Wild Wild West”

“Controlled Innovation”

> Past IT Management

- No corporate rules
- Individual innovation
- Unique processes
- Unique single instance IT
- Extensive duplication
- High cost interoperability
- Haphazard security
- No or military standards
- Home-grown GOTS
- Navy unique

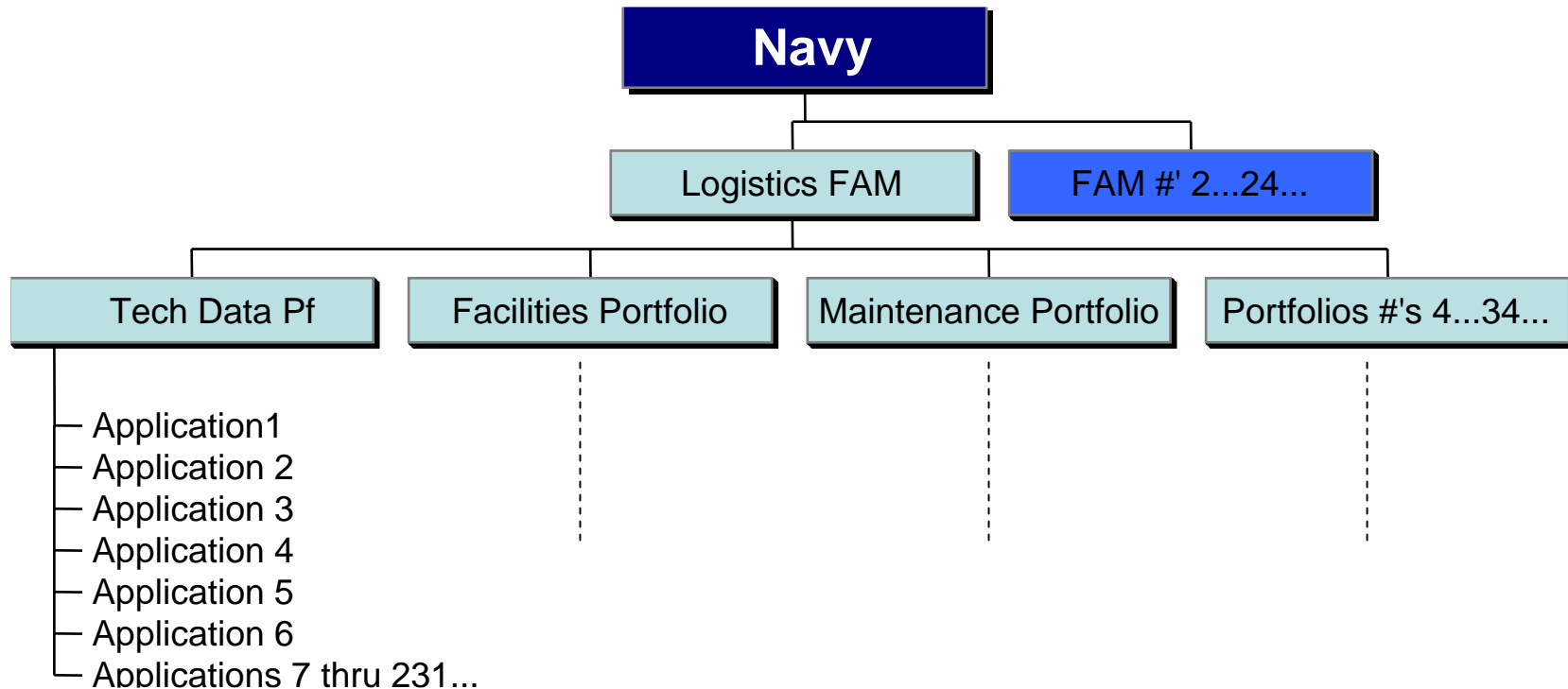
> Future IT Management

- Enforced corporate rule set
- Innovation within bounds
- Common processes
- Common portable IT
- Minimal duplication
- Interoperable by design
- Built-in & verified secure
- Commercial standards
- Maximum use of COTS
- Joint / Inter-agency

Legacy Logistics IT Management Restructuring

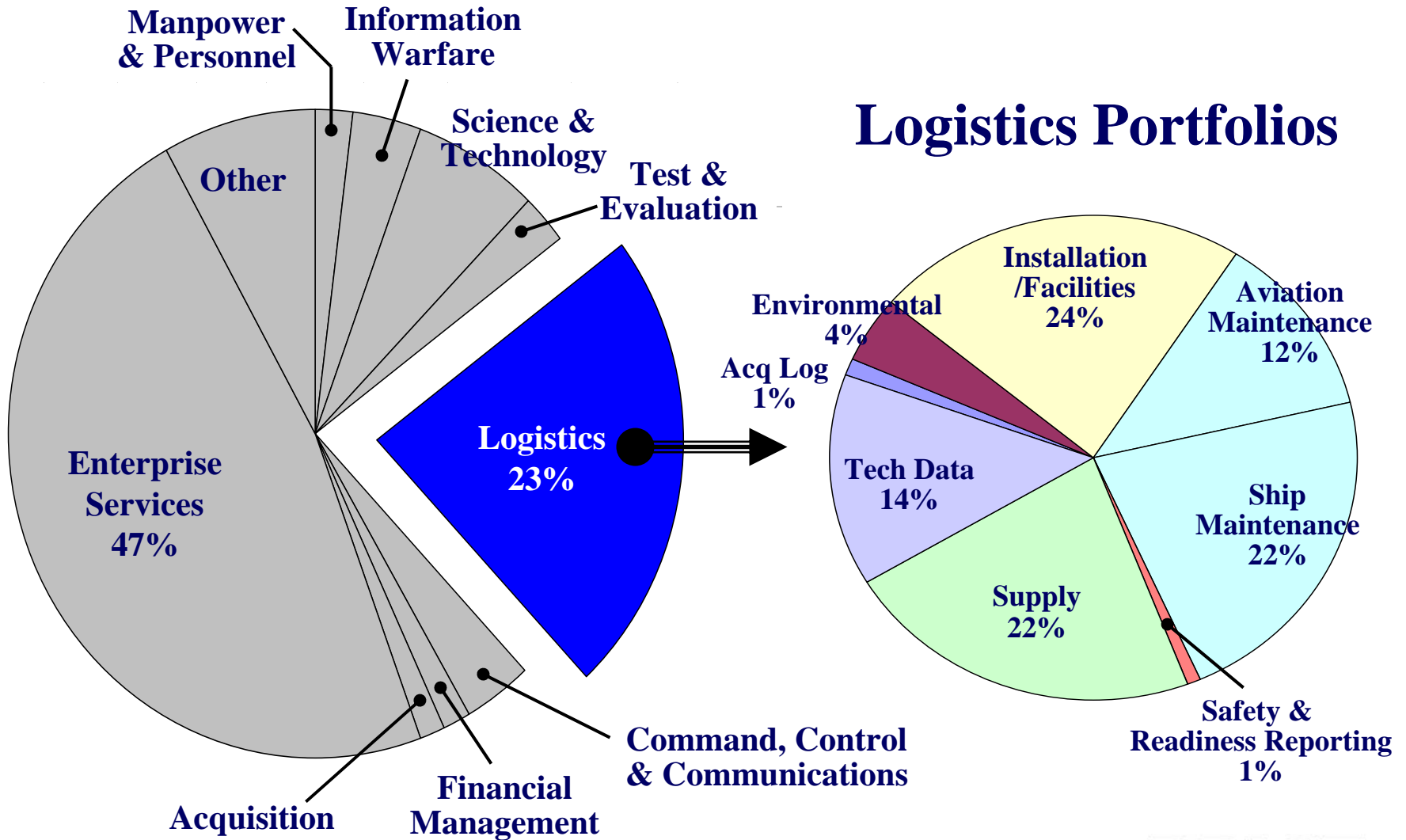
- > Rationalization for Logistics FAM is progress
- > Phase I resulted in a reduction of recorded Logistics applications from 15,000 to ~8,000
- > Phase II resulted in a reduction of recorded Logistics applications from ~8,000 to ~2,500
- > Phase III (Legacy IT Portfolio Management Restructuring) is in progress with 34 logistics portfolios

Legacy Logistics IT Management Restructuring



Approximately 2,500 Legacy Logistics applications

Legacy Logistics IT Management Restructuring



Legacy Logistics IT Management Restructuring

- > All resources, budgetary, personnel, and otherwise, will ultimately be transferred to the Umbrella IT portfolio and controlled by the Logistics IT PM
- > Establish a Configuration Control Board (CCB) to manage the various applications and systems in the Umbrella IT portfolio prior to aligning all resources
- > All new IT requirements will be required to link to an Umbrella IT Portfolio
- > The benefits from implementing the Umbrella concept include:
 - Improved accountability
 - Increased IT expenditure effectiveness
 - Expedited transformation to standard processes
 - Improved interoperability

Cost Estimation Requirements

- > Estimate “first cut” costs of approximately 2,500 IT systems in Logistics FAM
- > Maintenance costs vs. development costs
- > Estimated costs to be provided to Umbrella Portfolio Managers for further development
- > Challenges in gathering costs and cost driver information
 - Multiple data bases with limited cost info
 - Labor intensive research to “find” costs
 - Lack of accurate cost indicators
 - IT costs imbedded in other costs
 - No incentives to gather/report complete costs
 - Logistics systems developed/maintained with weapons programs

Cost Estimation Requirements

- Cost Element Structure
 - Investment
 - Systems operations and support
 - System and material management
 - Annual operations investment
 - Hardware maintenance
 - Software maintenance (COTS/GOTS)
 - Mega-centers operating costs
 - Data maintenance
 - Site operations
 - Contract leasing
 - Phase out or transition costs

Cost Estimation Solution

- > Estimate “should costs” for 2,500 applications by costing a portion of the applications and assigning costs to similar applications
 1. Gather all available cost and cost-driver information through existing databases
 2. Organize all Logistics FAM Applications into similar groups
 3. Survey and estimate cost for a sample of applications using TruePlanning
 4. Develop “should costs” by extrapolating known and estimated costs to all FAM applications

Cost Estimation Solution

- > PRICE TruePlanning software and services
 - Conducted several user training sessions
 - Assisted in actual cost estimation workgroup sessions
 - Reviewed sampling and cost estimation methodologies
- > Gather all available cost and cost-driver information through existing databases
- > Develop base costs for application maintenance, including Navy intranet costs, information assurance costs, etc



Cost Estimation Solution

- > Organized data for 2,500 applications into similar groups
 - Extracted Logistics FAM application data from DADMS
 - Determined major applications
 - Grouped all Logistics FAM applications into groups by
 - Application Type
 - Umbrella
 - COTS/GOTS
 - Volume of users
 - Current points of contact
 - Categorized special application types, e.g. Firmware, and estimate costs accordingly

Cost Estimation Solution

- > Developed and organized the questionnaire process
 - Developed methodology for selecting survey sample
 - Created questionnaire and utilized feedback gathered from respondents in its development
 - Managed questionnaire process

- > Sampling techniques
 - Sample 20% of major applications
 - Require minimum of 10% return
 - Distribute no more than 25 surveys to each recipient at a time
 - Pre-populate questionnaires with existing data from databases

Cost Estimation Solution

Sampling Methodology

| Application Type A | 100 Apps | | | | | <u>Samples</u> |
|--------------------|----------|-------------|---------|----------------------|---------|----------------|
| | | COTS | 50 Apps | | | |
| | | | | Client Server | 20 Apps | 4 |
| | | | | Web | 30 Apps | 6 |
| | | GOTS | 50 Apps | | | |
| | | | | Web | 10 Apps | 2 |
| | | | | Client Server | 10 Apps | 2 |
| | | | | Desktop | 30 Apps | 6 |
| | | | | | | 20 |

| Population | | Count | Sample Characteristics | Target of 20% | | Planned Surveyed* | | Actual Surveyed | |
|---------------------------|-------|-------|-------------------------|---------------|---------------------|-------------------|------------|-----------------|------------|
| Characteristics | Count | | | Count (20%) | Percentage of Total | Count | Percentage | Count | Percentage |
| Total Major Applications: | | 1,691 | Sample Size: | 338 | 20% | 380 | 20% | 203 | 12.0% |
| Application Type | | | Application Type | | | | | | |
| CAD/CAM | 81 | 1 | CAD/CAM | 16 | 5% | 26 | 32% | 21 | 25.9% |
| Control and Displays | 1 | 2 | Control and Displays | 0 | 0% | 1 | 100% | 1 | 100.0% |
| Customer Relationships | 1 | 3 | Customer Relationships | 0 | 0% | 1 | 100% | 1 | 100.0% |
| Data Processing | 41 | 4 | Data Processing | 8 | 2% | 12 | 29% | 11 | 26.8% |
| Database Systems | 370 | 5 | Database systems | 74 | 22% | 80 | 22% | 46 | 12.4% |
| Decision Support System | 70 | 6 | Decision Support System | 14 | 4% | 17 | 24% | 11 | 15.7% |
| ERP | 1 | | ERP | 0 | 0% | 1 | 100% | 1 | |
| Expert system | 1 | 8 | Expert system | 0 | 0% | 1 | 100% | 1 | 100.0% |
| Financial | 3 | 9 | Financial | 1 | 0% | 1 | 33% | 0 | 0.0% |
| Gis | 12 | 10 | Gis | 2 | 1% | 8 | 67% | 6 | 50.0% |
| Health Monitoring | 1 | 11 | Health Monitoring | 0 | 0% | 1 | 100% | 0 | 0.0% |
| Imaging | 6 | | Imaging | 1 | 0% | 4 | 67% | 2 | 33.3% |
| MIS | 955 | | MIS | 191 | 56% | 205 | 21% | 87 | 9.1% |
| MRP | 35 | | MRP | 7 | 2% | 12 | 34% | 8 | 22.9% |
| Office Automation | 20 | | Office Automation | 4 | 1% | 9 | 45% | 6 | 30.0% |
| Telecommunications | 2 | 16 | Telecommunications | 0 | 0% | 1 | 50% | 1 | 50.0% |
| Firmware | 92 | | Firmware | 18 | 5% | | | | |
| <i>Sub total</i> | 1,691 | | <i>Sub total</i> | 338 | 100% | 380 | | 203 | |
| Umbrellas | | | Umbrellas | | | | | | |
| Acquisition Logistics | 34 | | Acquisition Logistics | 7 | 2% | 2 | 6% | 0 | 0.0% |
| Tech Data | 231 | | Tech Data | 46 | 14% | 54 | 23% | 28 | 12.1% |
| Supply | 307 | | Supply | 61 | 18% | 80 | 26% | 53 | 17.3% |
| Maintenance | 592 | | Maintenance | 118 | 35% | 14 | 24% | 64 | 10.8% |
| Readiness | 17 | | Readiness | 3 | 1% | 4 | 18% | 1 | 5.9% |
| Environment | 100 | | Environment | 20 | 6% | 3 | 15% | 10 | 10.0% |
| Safety Mgt & Rpt | 43 | | Safety Mgt & Rpt | 9 | 3% | 8 | 89% | 1 | 2.3% |
| Installation Facilities | 346 | | Installation Facilities | 69 | 20% | 70 | 20% | 44 | 12.7% |
| Logistics | 1 | | NavyERP | 1 | 0% | 1 | 100% | 1 | 100.0% |
| Other | 20 | | Other | 4 | 1% | 1 | 5% | 1 | 5.0% |
| <i>Subtotals</i> | 1691 | | <i>Subtotals</i> | 338 | 100% | 380 | | 203 | |
| Lead EII | | | Lead EII | | | | | | |
| BUMED | 1 | | BUMED | 0 | 0% | 1 | 100% | 1 | 100.0% |
| CNI | 13 | | CNI | 3 | 1% | 7 | 54% | 7 | 53.8% |
| COMPACFLT | 30 | | COMPACFLT | 6 | 2% | 3 | 10% | 2 | 6.7% |
| FFC | 11 | | FFC | 2 | 1% | 0 | 0% | 0 | 0.0% |
| MSC | 34 | | MSC | 7 | 2% | 4 | 12% | 4 | 11.8% |
| NAVAIR | 329 | | NAVAIR | 66 | 19% | 71 | 22% | 55 | 16.7% |
| NAVFAC | 194 | | NAVFAC | 39 | 11% | 37 | 19% | 28 | 14.4% |
| NAVSAFECEN | 8 | | NAVSAFECEN | 2 | 0% | 0 | 0% | 0 | 0.0% |
| NAVSEA | 695 | | NAVSEA | 139 | 41% | 222 | 32% | 73 | 10.5% |
| NAVSUP | 86 | | NAVSUP | 17 | 5% | 24 | 28% | 24 | 27.9% |
| SPAWAR | 27 | | SPAWAR | 5 | 2% | 8 | 30% | 8 | 29.6% |
| SSP | 5 | | SSP | 1 | 0% | 1 | 20% | 1 | 20.0% |
| UNKNOWN | 258 | | UNKNOWN | 52 | 15% | 3 | 1% | 0 | 0.0% |
| <i>Sub total</i> | 1691 | | <i>Sub total</i> | 338 | 100% | 381 | | 203 | |

*Note: Planned Survey column is based on Adjusted Total of 1,504 vice total applications of 1,691.



Cost Estimation Solution

- > Managed communication to survey recipients
- > Managed survey distribution and tracked responses
- > Engaged stakeholders in the IT Management Restructuring effort
- > Use questionnaire responses to develop “should costs” of surveyed applications
 - Utilization of cost estimation software TruePlanning

Cost Estimation Solution

- > PRICE TruePlanner – True IT 2006
- > *Cost elements*
- > Server
 - Web
 - Client/server
- > Workstations
- > Peripheral Devices
- > Commercial of the shelf (COTS) license costs

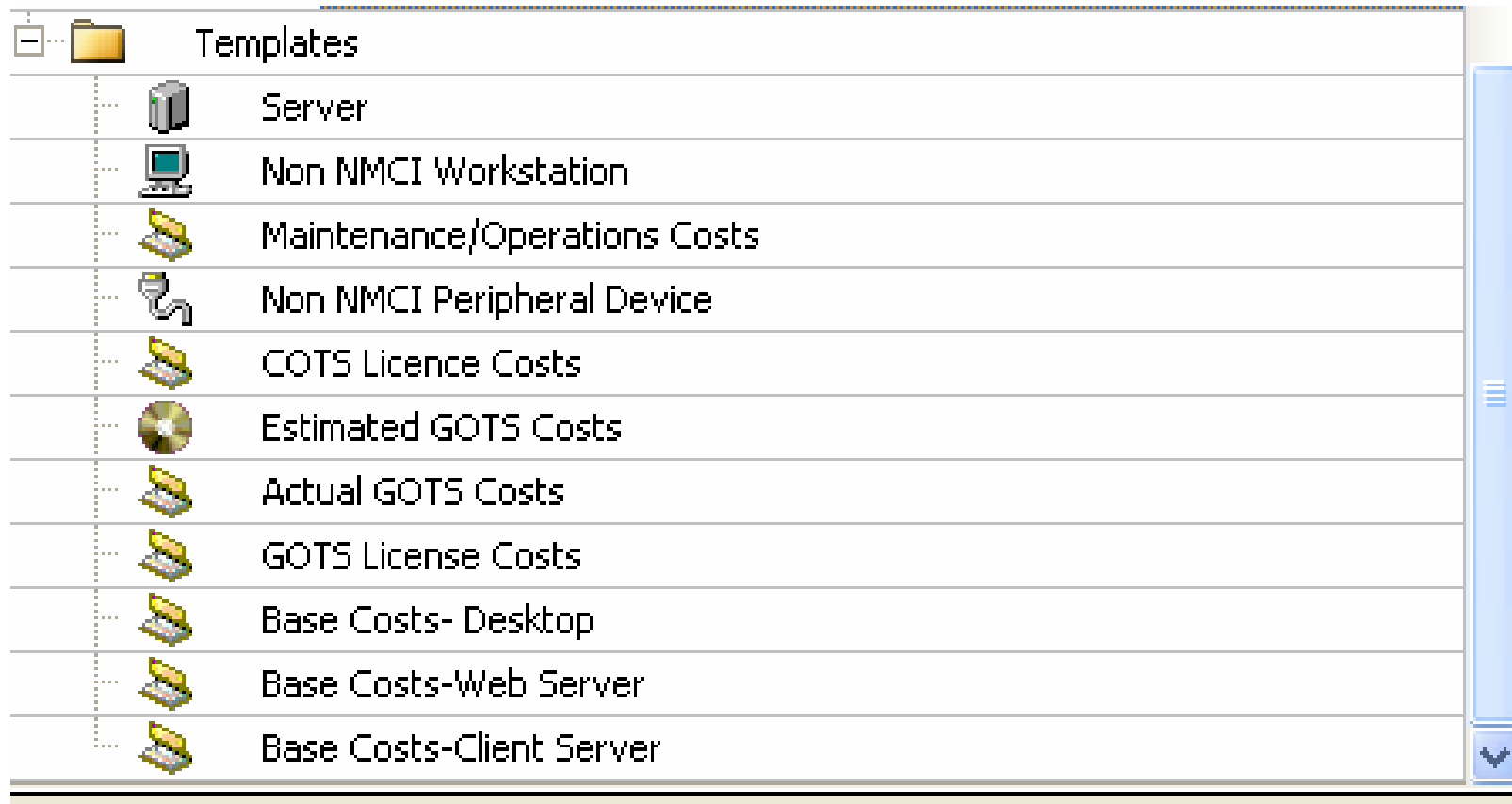
Cost Estimation Solution

- > Estimation of prior Government off the shelf (GOTS) development costs to estimate current maintenance costs
- > Actual GOTS costs
- > Actual GOTS license costs
- > Actual maintenance and operations costs
- > Base Costs – Client server
- > Base Costs – Web server
- > Base Costs – Desktop

Cost Estimation Solution

- > Base costs
 - Legacy systems connectivity to the Navy intranet
 - User support, helpdesks, training, requirements adjudication & processing
 - Program management, reporting, obtain & keep funding, architecture development, documentation development, briefings
 - Navy intranet certification
 - Department of Defense Information Technology Security Certification & Accreditation Process (DITSCAP)
 - Continuity of Operations Plans (COOP)

Cost Estimation Solution



- > Cost elements / Cost Objects

Cost Estimation Solution

Name: Notes:

| | | Value | Units | Notes |
|----|---------------------------------------|--|-------------|-------|
| 1 | Start Date | <input type="text" value="server start date"/> | | ... |
| 2 | End Date | <input type="text" value="default end date"/> | | ... |
| 3 | Initial Hardware Required | 1.00 | | ... |
| 4 | Inventory | 0.00 | | ... |
| 5 | Additional Hardware Required | 0.00 | | ... |
| 6 | Removed Hardware | 0.00 | | ... |
| 7 | Number of End Users | 0.00 | users | ... |
| 8 | Unit Lifetime | 5.00 | years | ... |
| 9 | Unit Purchase Price | 3,000.00 | | ... |
| 10 | Software Cost per Unit | 6,258.91 | | ... |
| 11 | Hardware Cost per Upgrade | 180.00 | | ... |
| 12 | Hardware Maintenance Contract Cost | 731.25 | | ... |
| 13 | Software Maintenance Contract Cost | 6,067.50 | | ... |
| 14 | Software Patches Installed per Server | 9.00 | patches/... | ... |
| 15 | Time Between Software Upgrades | 1.30 | Years | ... |
| 16 | Time Between Hardware Upgrades | 1.60 | Years | ... |
| 17 | Installation Time | 24.86 | hours | ... |

> Sample input screen for server / 12 additional input fields for server



Cost Estimation Solution

| | Cost Profile : Swiftview 21069 - [Folder] Currency in USD (\$) (in January, 2006) | 2006 | 2007 | 2008 | 2009 |
|---|--|---------------|---------------|---------------|---------------|
| 1 | Estimated GOTS Costs | 30,421 | 30,421 | 30,421 | 30,421 |
| 2 | Server | 35,131 | 34,753 | 33,997 | 34,753 |
| 3 | | 1,785 | 1,605 | 1,557 | 1,605 |
| 4 | Base Costs- Desktop | 5,000 | 5,000 | 5,000 | 5,000 |
| 5 | Total | 65,552 | 65,174 | 64,419 | 65,174 |
| 6 | | 6,785 | 6,605 | 6,557 | 6,605 |

> Results screen



Cost Estimation Solution

- > Use estimated “should costs” and any existing cost of analogous applications to develop “should costs” of non-surveyed applications
- > Developed methodologies for cost extrapolation
 - Utilize completed surveys and valid researched costs
 - Based on groupings of similar applications
 - Application type, COTS/GOTS, architecture, etc.
 - Desktop and client server applications methodology based on average cost per user
 - Web based applications based on average application cost and scaling factors

Cost Estimation Solution

| Umbrella A | Sample | Cost | Scaling Factors | App | Cost |
|------------|--------|----------|-----------------|-----|----------|
| - COTS | App | Estimate | | App | Estimate |
| - Desk Top | 1 | \$ | | 4 | \$ |
| | 2 | \$ | | 5 | \$ |
| | 3 | \$ | | 6 | \$ |
| | | | | 7 | \$ |
| 30 apps | | | | 8 | \$ |
| 3 samples | | | | ● | \$ |
| | | | | ● | \$ |
| | | | | ● | \$ |
| | | | | 30 | \$ |
| | | | | | |

Example: Scaling factor for desktop applications can be based on number of users.



Cost Estimation Solution

Excerpt of Master Cost Capture Matrix

| General Information | Recorded Costs (DADMS) | | Recorded Costs (OTHER) | | | Modeled Costs | | |
|--|------------------------|--------------------|-------------------------|-----------|----------|---------------|--|---|
| | Application Name | License Costs | Maintenance Costs | DITPR DON | NITESTAR | Other | TruePlanning Modeled Costs From Survey Information | Modeled Costs From Analogous Applications |
| ASSESSMENT OF EQUIPMENT CONDITION AUTOMATED INFORMATION SYSTEM | \$0 | None recorded | \$215,000 | \$215,000 | | | | \$215,000 |
| SHIP CONFIGURATION LOGISTICS IMPROVEMENT PROGRAM | \$30,000 per Year | \$125,000 per year | | | | \$175,000 | | \$175,000 |
| WEB INTEGRATED LOGISTICS INFORMATION DATA SYSTEM | \$10,000 per year | None recorded | | | | | \$340,000 | \$340,000 |

- > Each of the 2,500 applications are recorded on matrix
- > Contains additional data such as architecture, COTS/GOTS, application type, ownership
- > Cost is estimated by;
 1. Known costs in Budgeting databases (DITPR-DON, NITESTAR, etc.)
 2. Modeled costs using TruePlanning
 3. Modeled costs from analogous application



Funding Realignment

- > Identify Cost Line Items in Navy's Budget
 - Analytical approach in identifying the specific budget funding line that is paying for the IT systems and applications
 - Conduct research within the Navy Budgeting system
 - Align resource sponsorship

- > Execution of Budgetary Moves
 - Develop funds transfer process
 - Align plan with government financial best practices
 - Determining the correct timing for initiating and executing budget and funds reallocations
 - Realign Funding

