ALMR Total Cost of Ownership (TCO)
Detailed Briefing Report

…Building a cost shared, statewide, secure public safety land mobile radio communications system available for use by all federal, state and local agencies in Alaska…

March 2005

Prepared by: Market Strategy Group

www.mkt-strat.com

Market Strategy Group, LLC

Report Background

In February 05, Market Strategy Group presented a detailed PowerPoint presentation (briefing) entitled “Alaska Land Mobile Radio Total Cost of Ownership Project” to the ALMR Executive Council in Anchorage. The Executive Council requested that a *Microsoft Word* document be developed which could used in conjunction with the PowerPoint presentation to amplify the content on the slides. The PowerPoint presentation is the property of the United States Department of Defense and may be obtained by contacting HQs Alaskan Command J6 Elmendorf Air Force Base AK.

This document provides additional detail for the entire report which consisted of 83 slides, plus an appendix containing 48 slides. To enhance the readability and understanding of this document it has been accompanied by the PowerPoint slides which were delivered to the Executive Council in the February 05 timeframe. Any questions on the content of either the PowerPoint briefing or this Word Document should be directed to the following personnel:

Tim Woodall
ALMR Program Management Office
Timothy.Woodall@ELMENDORF.af.mil
907.552.8223

Spencer Stern
Partner, Market Strategy Group
spencer.stern@mkt-strat.com
773.965.1650

Slide 1

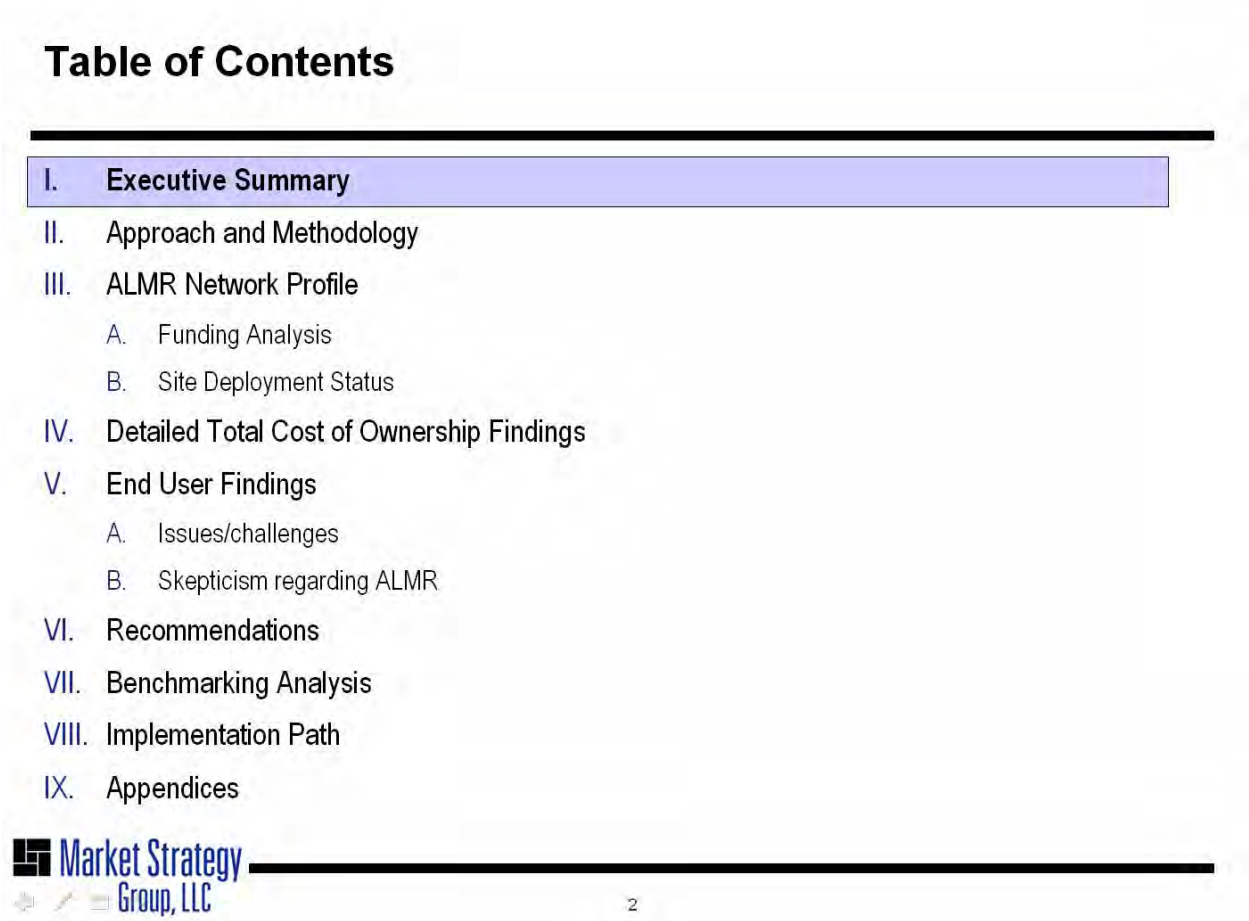
Alaska Land Mobile Radio
Total Cost of Ownership Project

February 2005

Market Strategy Group, LLC

The Total Cost of Ownership (TCO) report was commissioned by the Alaska Land Mobile Radio (ALMR) Department of Defense (DOD) Program Management Office (PMO), who engaged Market Strategy Group, LLC to complete the project. This report is one of two critical reports associated with determining the Total Cost of Ownership for the ALMR System Enterprise Infrastructure. The primary purpose of this report was to determine each organization's current cost per subscriber unit for using their existing conventional or trunked Land Mobile Radio (LMR) two-way radio communications network. The second critical report will examine the total cost of ownership associated with the ALMR System Enterprise Infrastructure and propose three possible courses of action for implementing a cost shared approach among the cooperative ALMR stakeholders. During the actions associated with analyzing, preparing, and presenting this report, data was collected during interviews with more than 60 organizations. Market Strategy Group collected not only quantitative data on an organization's current LMR costs, but also qualitative data regarding issues with their current conventional network. During the interviews, stakeholders shared their support as well as skepticism and issues they have with the ALMR program. These issues were examined in relationship to program management risk, success, and failure.

Slide 2



This report is divided into two major sections. Sections II-IV focus on the TCO quantitative detail. It provides TCO data per user segment: DoD, State, Local, Railroad, and non-DoD federal. In addition it identifies the high level monthly capital and operations & maintenance (O&M) costs for the existing operational conventional or trunk system for each segment. Sections V-VI focus on issues currently confronting the ALMR PMO and the steps/recommendations that the PMO can pursue to address these issues.

To secure best-in-class ideas on how to operate an area-wide LMR network a benchmarking analysis was completed. A total of 14 domestic organizations participated, including Alaska. In addition, a suggested implementation path is presented which is designed to guide the ALMR PMO as they pursue their next steps.

Slide 3

Executive Summary - Background

- **ALMR (Alaska Land Mobile Radio) has built an impressive foundation consisting of leading edge LMR (Land Mobile Radio) technology. Based on benchmark data collected, ALMR represents the most collaborative LMR effort among government agencies at all levels. A snapshot of ALMR's foundation:**
  - Currently 15 operational sites with 5,800 users programmed on the system
  - Cumulative funding received for program management and infrastructure costs are $76M, from the following sources:

  - Several proven demos involving at least 600 subscriber units and more than 10 participating agencies from all levels of government (Operation Winter Talon, Northern Edge 2004, Unified Defense 2004)
  - Functioning program management office (PMO) and executive council with representation from different user groups.
- **However, to reach the target state of 87 sites and over 17,000 users, several hurdles must be addressed**
  - The State of Alaska's ability to secure funds and resources
  - The commitment from large state agencies, such as Alaska State Troopers (AST) and the Department of Transportation (DOT), to join and become advocates
  - The ability of the PMO to execute the program plan
  - Lack of effective outreach to targeted users and communication of ALMR value proposition
  - Skepticism from a large portion of the potential user community on the viability of ALMR, including pricing, network performance, the need to maintain conventional network as backup, and others

Market Strategy Group, LLC

3

There are many positive items about ALMR. Currently 15 sites have been deployed with more than 5,800 users programmed for use. In addition, there have been several exercises and a real world Joint Task Force operation which have successfully leveraged ALMR's capabilities. Also, more than $76,000,000 has already been committed to the program. The current contributions are predominantly from the DoD (73%). However, adding up the current sources of funds indicates that actually 94% of the total funding received to date comes from federal sources (grants, earmarks, inserts, etc.). Of note is the State and Local government's dependence on federal funding. This funding strategy has not proven to be successful, and a new approach to meeting the funding resource requirements must be examined and executed.

To ensure that ALMR meets its targeted objectives and key deployment dates, these are several critical success factors which must be met. These factors include a new funding strategy, converting all state users, especially the Alaska State Troopers and the DOT, to active AMLR advocates, and strengthening the relationship of the DoD and the SOA team within the PMO by recruiting new, qualified personnel into the PMO. In addition, creating an independent user group must be a short-term priority.

An important item that is consistently stressed throughout this report is the requirement to do a better, more consistent job at user educational and outreach. Detailed examples on how to improve this area will be discussed later in this report.

Slide 4

Executive Summary - Findings

- **To overcome some of the hurdles, the DoD conducted a Total Cost of Ownership (TCO) study and is developing a cost share plan which will be completed in March 2005.**
  - The TCO study involved conducting interviews with more than 60 LMR user organizations.
  - Based on this study, the current conventional LMR unshared monthly network cost per subscriber unit, by user segment is:

	Overall	DoD	State	Local	Railroad	Federal
Operations & Maintenance	28	15	30	41	39	33
Capital expenditures	12	9	11	14	30	7
TOTAL COST	40	24	41	55	69	40

- **Based on a benchmarking analysis of area-wide LMR networks, the current LMR TCO is on par with the networks that charge user access fees, which ranged from $31-$53/month per trunked subscriber unit. In addition, certain best practices were noted that help foster adoption, including:**
  - Creating a users council which can be instrumental in building initial user base
  - Conducting face to face meetings / summits with all targeted organizations
  - Providing loaner radios / performing live demos
  - Involving the city/state police as primary drivers in planning and recruiting processes
  - Involving vendors in the user education processes

Market Strategy Group, LLC

4

The aggregated per subscriber unit cost for the current conventional LMR network for the organizations interviewed is $40. The primary reasons that the DoD has the current lowest per unit costs is due to their economies of scale in both procurement and usage, the limited area their network covers, and a strict adherence to LMR policies and procedures.

The state's cost is on par with the overall average. The SOA benefits from centralized purchasing and economies of scale. The locals were higher than the average due to a lack of centralized purchasing; some regions encompass a very large section of land and therefore require more equipment and resources. In addition, it appears that many local agencies do not closely adhere to LMR policies and procedures. Very few local agencies actually had documented LMR policies and procedures.

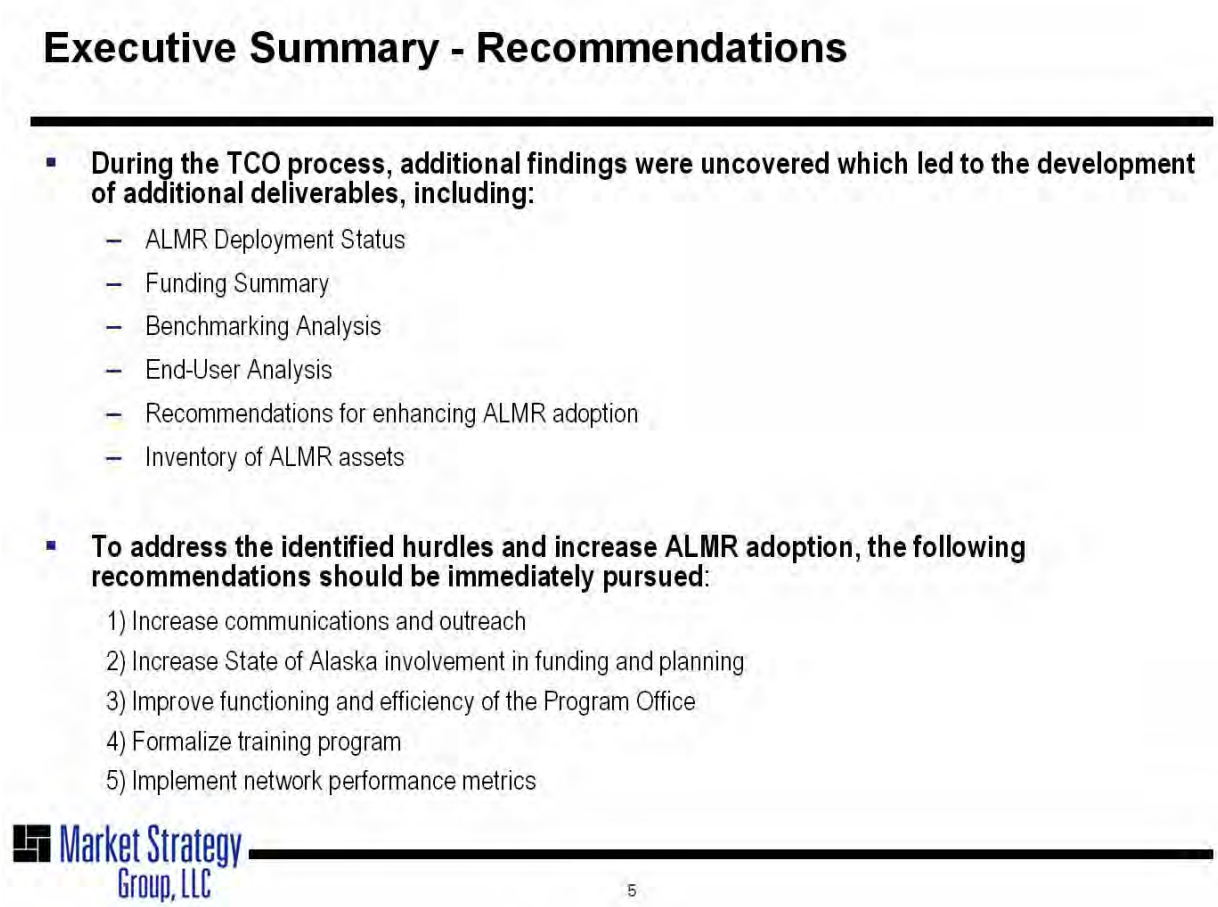
The Railroad's cost is very high because they currently maintain three LMR networks, plus their SATS cost is very high.

The federal number, though on-par with the overall cost, is based on a very small sample size of only 3 agencies reporting data.

The current overall cost of $40 is in-line with the benchmark data of $31-$53/unit for trunked networks. However, it is important to note, that trunked networks are typically more expensive on a per unit basis because these networks contain more modern technology and have enhanced feature functionality.

This slide also contains specific recommendations that could assist the PMO in increasing their penetration, and converting new users into active ALMR advocates.

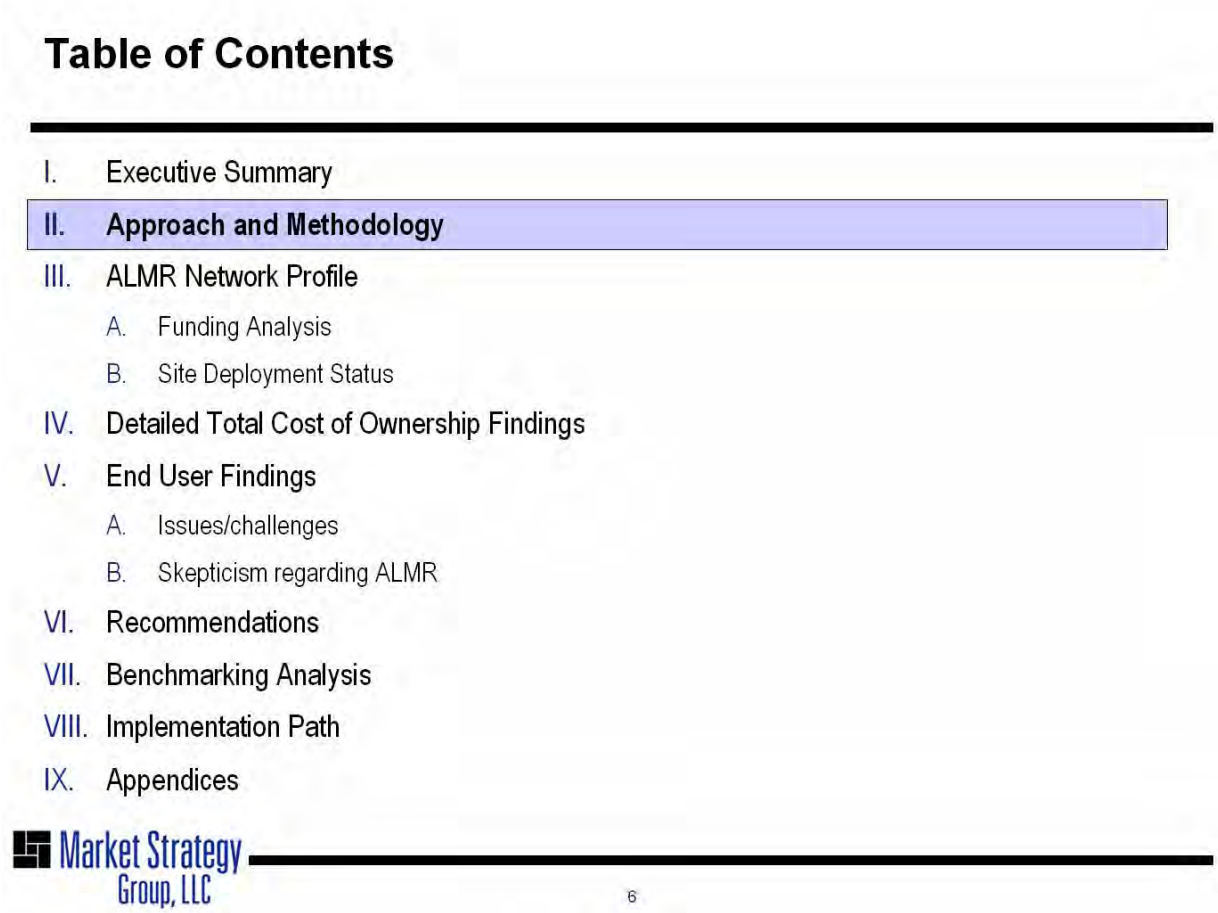
Slide 5



Market Strategy Group (MSG) was initially retained to conduct a TCO study, however due to the volume of information collected in the interview process it was important to funnel this data to the PMO. MSG felt that by sharing this information with the PMO, it could help improve the effectiveness of the PMO, as well as enhance user adoption.

Five specific high-level recommendations are presented. To improve the PMO effectiveness it is important that all five recommendations be pursued; all are equally important in securing new, satisfied users. These recommendations are detailed in Section VI. The primary benefit of implementing the recommendations is to create active ALMR advocates that will drive more potential users to proactively approach ALMR seeking participation, which will ultimately produce the intended results of expressed in the ALMR Executive Council's overall goals.

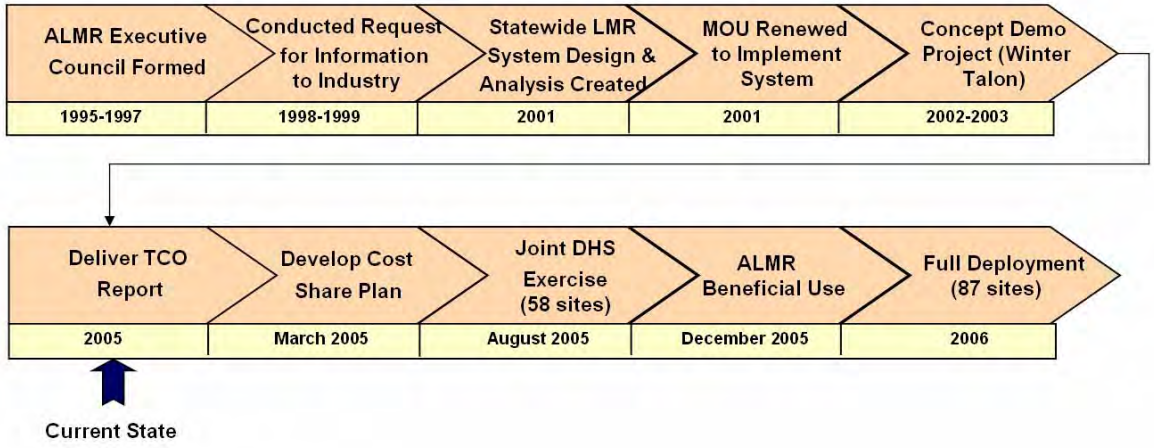
Slide 6



This section focuses on the approach and methodology deployed to collect the quantitative and qualitative data.

Slide 7

ALMR Timeline – High Level



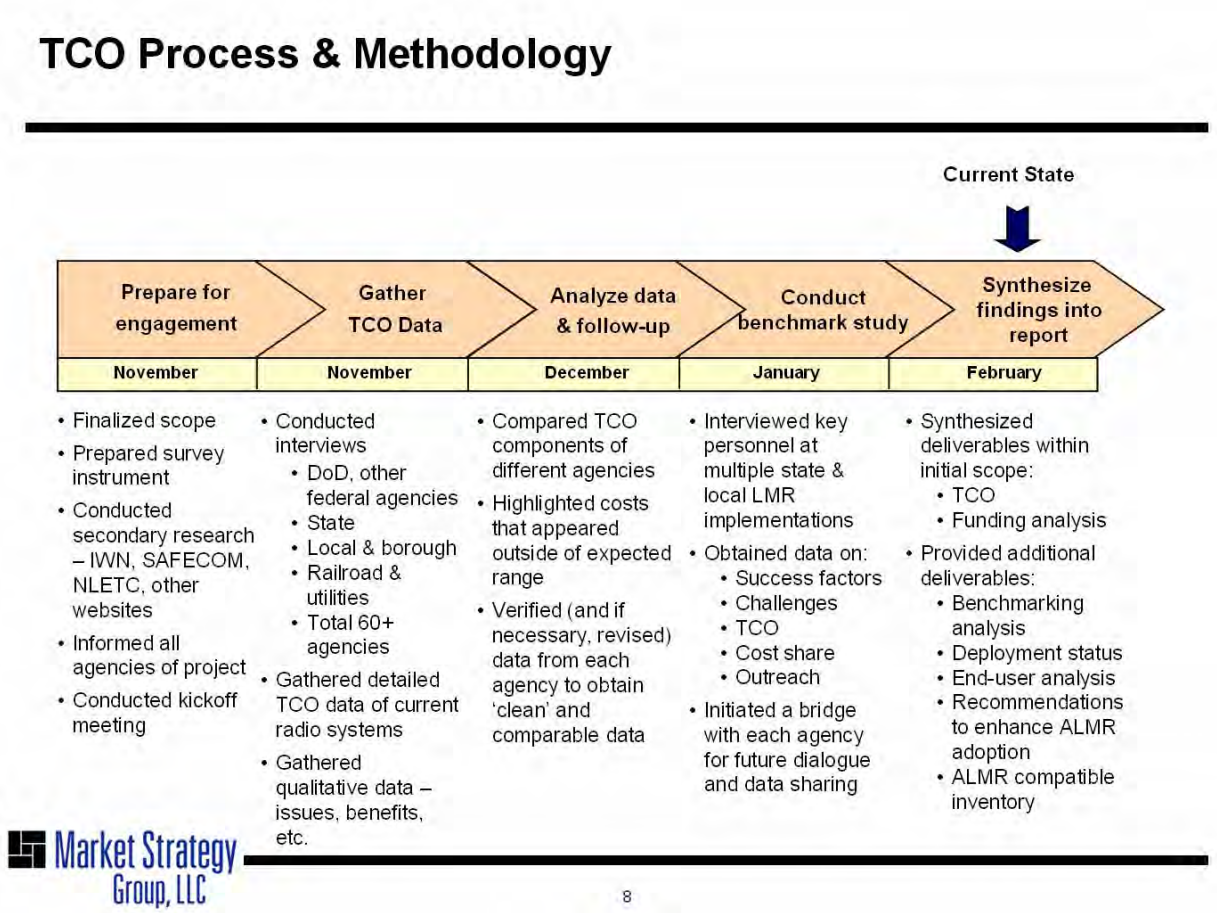
Note: MOU – Memorandum of Understanding

Market Strategy Group, LLC

7

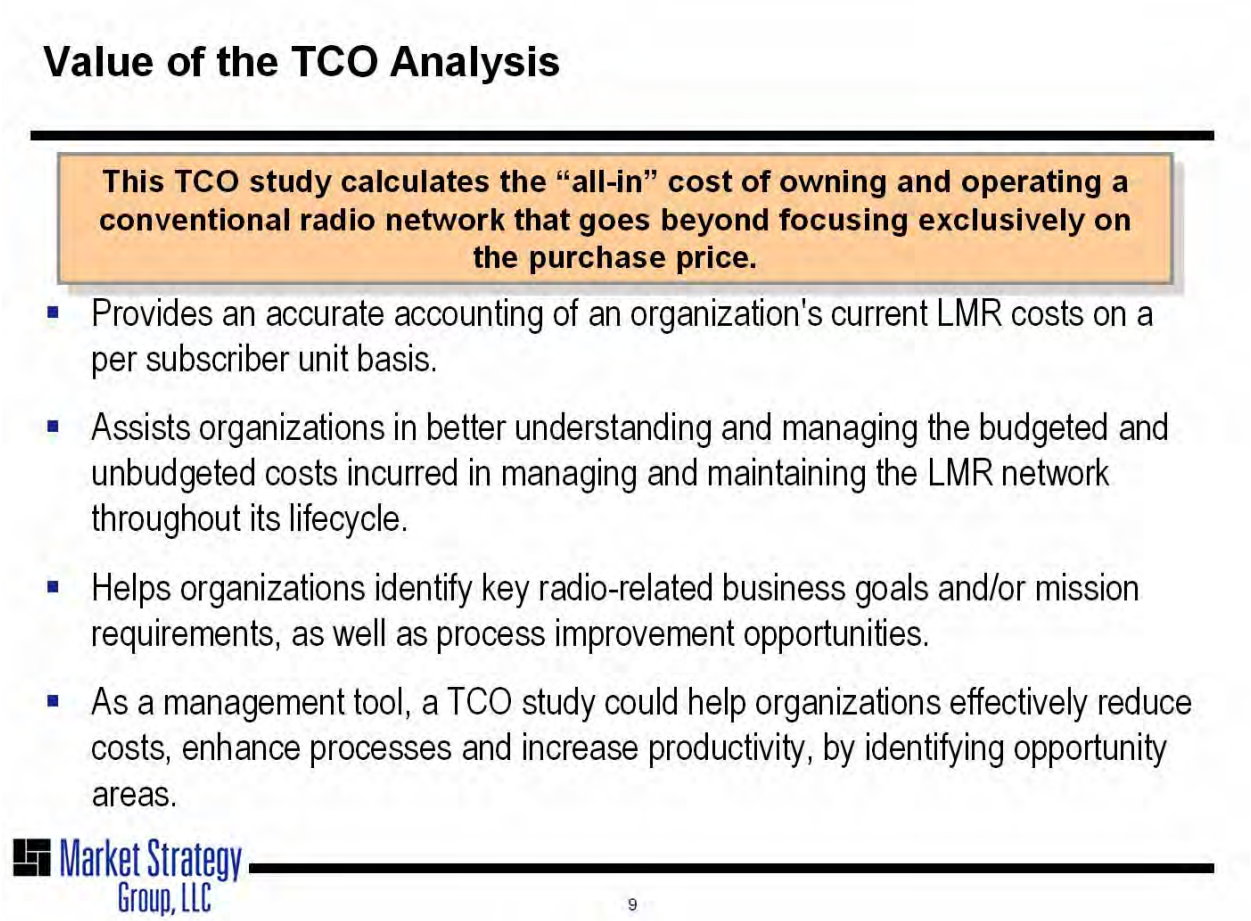
Based on this high level timeline, ALMR has made significant progress. The next key deliverable that MSG is responsible for is the cost share plan. This plan will assess the total cost of the operating the ALMR shared infrastructure. Further it will present multiple models which the Executive Council can utilize to determine a fair and reasonable monthly access fee to charge ALMR users. Currently MSG is developing this model and will have it completed by April 2005. The two other important milestones this year involve the joint DHS exercise in August and reaching beneficial use in December. If these key milestones are not met, full deployment as of December 31, 2006, which was mandated by an FCC waiver, could be jeopardized.

Slide 8



As mentioned earlier, this engagement started in November 2004. A large volume of data was collected, synthesized and analyzed to compile the TCO report. This timetable presents a detailed list of tasks that the MSG team completed. The benchmark study findings will be presented in Section VII.

Slide 9



This slide was used in the November TCO kick-off meeting held in Anchorage. TCO is a rigorous quantitative analysis which utilizes detailed financial tools to capture and analyze the data. This slide not only details the value of conducting a TCO analysis, but provides a clear definition. The "all-in" cost not only includes all LMR-related equipment and O&M expenses, but also captures the time of resources that are not exclusively dedicated to the LMR network, such as personnel from the following departments: legal, procurement, contracting, finance, accounting, logistics, and transportation, among others. Capturing all of these elements helps provide a comprehensive TCO for a user's current conventional LMR network.

Slide 10

Organizations Interviewed - 60

Air Force Guard	DMVA (Department of Military and Veterans Affairs)	Juneau Fire Department	ProComm Alaska, LLC
Alaska National Guard - Procurement	Drug Enforcement Administration (DEA)	Juneau Police Department	Road Maintenance Division of the Dept. of Transportation (DOT)
Alaska Railroad	Eielson AFB, Cope Thunder	Kenai Fire Department	Seward Fire Department
Alaska State Troopers	EFJohnson, Inc. Alaska Account Team	Kenai Peninsula, Central Emergency Services	Seward Police Department
ALMR Program Management Office	Elmendorf AFB	Kenai Police Department	Seward Emergency Services
Alyeska Pipeline	Fairbanks – North Star Borough	Kenai – Public Works	SOA Division of Forestry
Anchorage Airport	Fairbanks Fire Department	Mat-Su - Public Works	Soldotna Fire Department
Anchorage Municipal Light & Power	Fairbanks Police Department	Mat-Su Borough Department of Emergency Service	Soldotna Police Department
Army Guard	FBI	Mat-Su Borough Public Works	TSA (Transportation Security Administration)
City and Borough of Juneau	Homer Fire Department	Motorola, Inc. Alaska Account Team	U.S. Army (Forts Richardson, Greely, Wainwright)
CLEAR AFB	Homer Police Department	Municipality of Anchorage	U.S. Coast Guard
Department of Defense - Alaska	Homer Emergency Services	National Park Service	U.S. Fish & Wildlife Service
Department of Administration	Information Systems Support, Inc.	Nikiski Fire Department	Valdez Police Department
Department of Environmental Conservation (DEC)	IWN (Integrated Wireless Network)	North Pole Fire Department	Wasilla Police Department
Department of Health and Social Services (DHSS)	Juneau City Government	Palmer Police Department	Whittier, Alaska

Market Strategy Group, LLC

10

A total of 60 organizations were interviewed for this project. Frequently multiple personnel from each listed agency attended the interview. More than 80% of these interviews were conducted in-person. The interviews included key agencies from all five segments: DoD, SOA, local, railroad, and non-DoD federal. In addition, several vendors associated with the current LMR operations as well the ALMR deployment were interviewed. The ALMR PMO set up a majority of the interviews and provided contacts for those they were unable to set up. Of the organizations targeted to participate, more than 90% were interviewed.

Slide 11

Non-Participating Organizations

The following organizations declined to be interviewed, or did not submit complete LMR TCO data:

- U.S. Customs
- U.S. Department of Agriculture
- FAA
- Marine Highway (Alaska DOT)
- Fairbanks International Airport

Market Strategy Group, LLC

11

There were a few organizations which declined to participate. Some of the reasons were:

- "Not enough time due to a reorganization that is happening."
- "I have no idea who would have that information, so I do not know where to direct you."
- "The person who had that information recently retired and his position has not been filled."

A few agencies never returned phone calls/emails. MSG worked closely with the PMO to ensure that solid contact information for all potential agencies was secured. Follow-up to secure participation was frequent and consistent.

Slide 12

Table of Contents

Market Strategy Group, LLC

12

The next set of slides focus on the ALMR funding received to date and the requested funding for FY06. This analysis allocates the funding by segment: DoD, SOA, and local government agencies that were determined to be viable stakeholders in the ALMR cost share planning process.

Slide 13

ALMR Cost Summary as of Fiscal Year 2005 (FY 05) (excluding subscriber units)

	Funding Received	Unfunded	Total
State of Alaska	$12,756,075[1]	$9,387,000[2]	$22,143,075
Department of Defense	$55,338,297	0	$55,338,297
Local Agencies	$7,650,000[3]	$6,650,000[4]	$14,300,000
Total	**$75,744,372**	**$16,037,000**	**$91,781,372**

Notes
This summary, and the next 2 slides, represent the total federal, state, and local funding contributions to the ALMR program which includes: (i) Program Management (PM) costs, including personnel and contract deliverables to produce program documents, (ii) Operating and Maintenance (O&M) costs for systems management of the new infrastructure which includes SATS O&M, (iii) implementation services, and (iv) site preparation costs. It excludes any costs related to subscriber units.

1. The total amount of state funding sources are: federal (70%), state (30%).
2. The state's unfunded sources are: federal (94%), state (6%).
3. The total amount of the local agencies' funding sources are: federal (86%), local (14%). Please note this number is an estimate.
4. The local agencies unfunded sources are all federal.

The state has received more than 70% of funding through FY 05 from federal sources. Overall, for PM and infrastructure costs, federal funding accounts for more than 93% of the funding received, and more than 96% of the unfunded amount.

Market Strategy Group, LLC

13

The analysis excludes any subscriber unit funding. The cost share approach requested by the Executive Council specifically required that the analysis focus on the ALMR Network System Enterprise Infrastructure. Based on the current amount of funding, federal sources have provided more than 93% of the total funding. Currently the DoD is paying for the equipment and site prep for many of the sites for which the SOA was initially responsible. In addition, the DoD is paying for warranties, training, and PMO costs which equally benefit the locals and SOA. The DoD is covering this funding shortfall with the understanding that there is no guarantee that they will get reimbursed from the locals or SOA.

Another concern is the unfunded portion. For both the SOA and locals, a high percentage of their overall commitment is unfunded. Due to the funding disparity and the high unfunded amount, a new funding strategy/approach should be pursued which is not overly reliant federal sources to secure the required funding, nor is reliant on DoD to continue to cover critical funding milestones in order to mitigate overall program risk. To be successful the SOA and local agencies should contribute their fair share to ALMR. The local agencies could consider bond issues to make up the differential, and the SOA should consider additional state-related funding sources. If the current funding percentages continue, the DoD may need to consider an aggressive risk mitigation strategy as they are contributing a disproportionably large amount. If this occurs, the entire ALMR program could be at risk, because the DoD may find no other alternative but to withdraw their resources.

According to the original budget estimate compiled by the PMO, it is estimated that the final cost of the ALMR program, including subscriber units will be approximately $151M, this has proved to be accurate.

Slide 14

ALMR Cost Summary – FY 06 Funding Requests[1] (excluding subscriber units)

	Funding Requested
State of Alaska [2]	$9,800,000
Department of Defense	$8,100,000
Local Agencies [3]	TBD
Total	**$17,900,000**

Notes
1.The FY 06 funding cycle has not yet been completed, so additional funds may still be requested.
2.The state's funding sources are: federal ($9,100,000), state ($700,000).
3.The local agencies funding source will be entirely federal. Though a formal request has not been made, they must file their application by March 2005.

More than 96% of the total FY 06 requests will be from federal funds.

Market Strategy Group, LLC

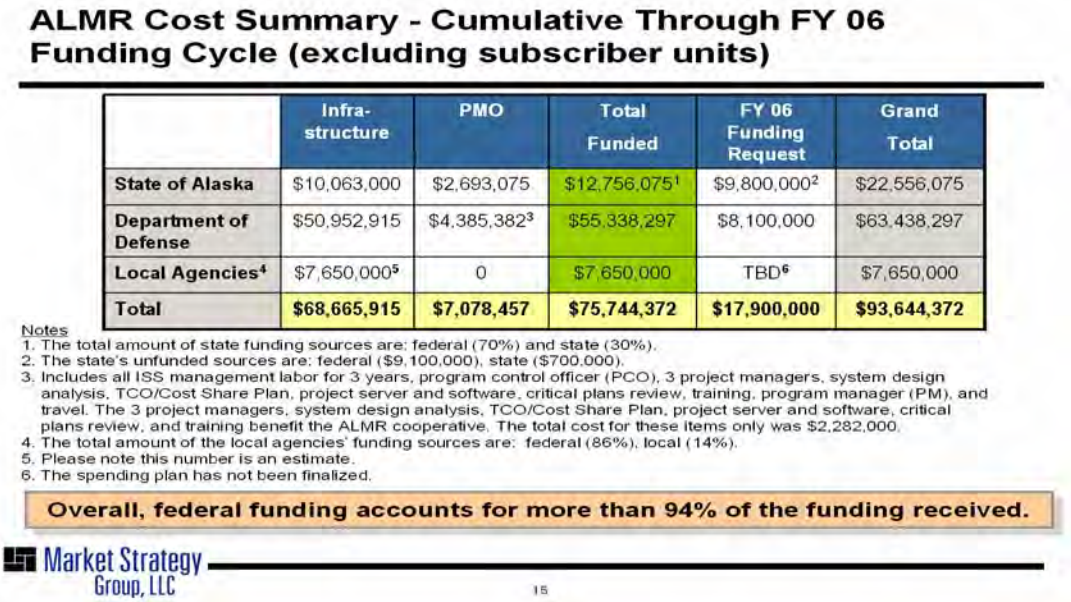
14

It is estimated that the local agencies will need to earmark at least $13M according to the *Tri-borough Focus Project* report. This amount was not included in this TCO report because the actual proposal has not yet been made. The locals must get this request in before March 31, 2005. Another important item is that the FY06 state request does not include an amount for site preparation unfunded from the previous year, which leaves a critical funding shortfall to meet the State's commitment to complete 30 more sites in the 2006 time frame. It is estimated that the State would require $13.5M to meet previous year requirements and approximately $10.6M to meet the current year requirements. This does not include operations and maintenance cost share requirements that arise as sites are made operational.

It is anticipated that the Local Agencies' request will primarily consist of federal funds. It has yet to be determined whether the Local's FY06 request will include a catch up amount for their unfunded portion from previous years.

As in the funding received to date, the state's funding request is predominantly reliant on federal sources.

Slide 15



ALMR Cost Summary - Cumulative Through FY 06 Funding Cycle (excluding subscriber units)

	Infra-structure	PMO	Total Funded	FY 06 Funding Request	Grand Total
State of Alaska	$10,063,000	$2,693,075	$12,756,075[1]	$9,800,000[2]	$22,556,075
Department of Defense	$50,952,915	$4,385,382[3]	$55,338,297	$8,100,000	$63,438,297
Local Agencies[4]	$7,650,000[5]	0	$7,650,000	TBD[6]	$7,650,000
Total	**$68,665,915**	**$7,078,457**	**$75,744,372**	**$17,900,000**	**$93,644,372**

Notes
1. The total amount of state funding sources are: federal (70%) and state (30%).
2. The state's unfunded sources are: federal ($9,100,000), state ($700,000).
3. Includes all ISS management labor for 3 years, program control officer (PCO), 3 project managers, system design analysis, TCO/Cost Share Plan, project server and software, critical plans review, training, program manager (PM), and travel. The 3 project managers, system design analysis, TCO/Cost Share Plan, project server and software, critical plans review, and training benefit the ALMR cooperative. The total cost for these items only was $2,282,000.
4. The total amount of the local agencies' funding sources are: federal (86%), local (14%).
5. Please note this number is an estimate.
6. The spending plan has not been finalized.

Overall, federal funding accounts for more than 94% of the funding received.

Market Strategy Group, LLC

15

It is important to note on this slide that these amounts may change based on the state's supplemental budget request ($6.1M). Currently, more than 50% of the PMO costs are being paid by the DoD and provide benefit to all agencies in the cooperative. In fact, most if not all critical plans documents, security analysis actions, TCO, training, project server hardware, software, and program management personnel are being provided by the DoD. The SOA is using training slots that the DoD procured for their own personnel. In addition, the wrap around warranty and system management and system technologist support procured by the DoD benefits all potential ALMR users.

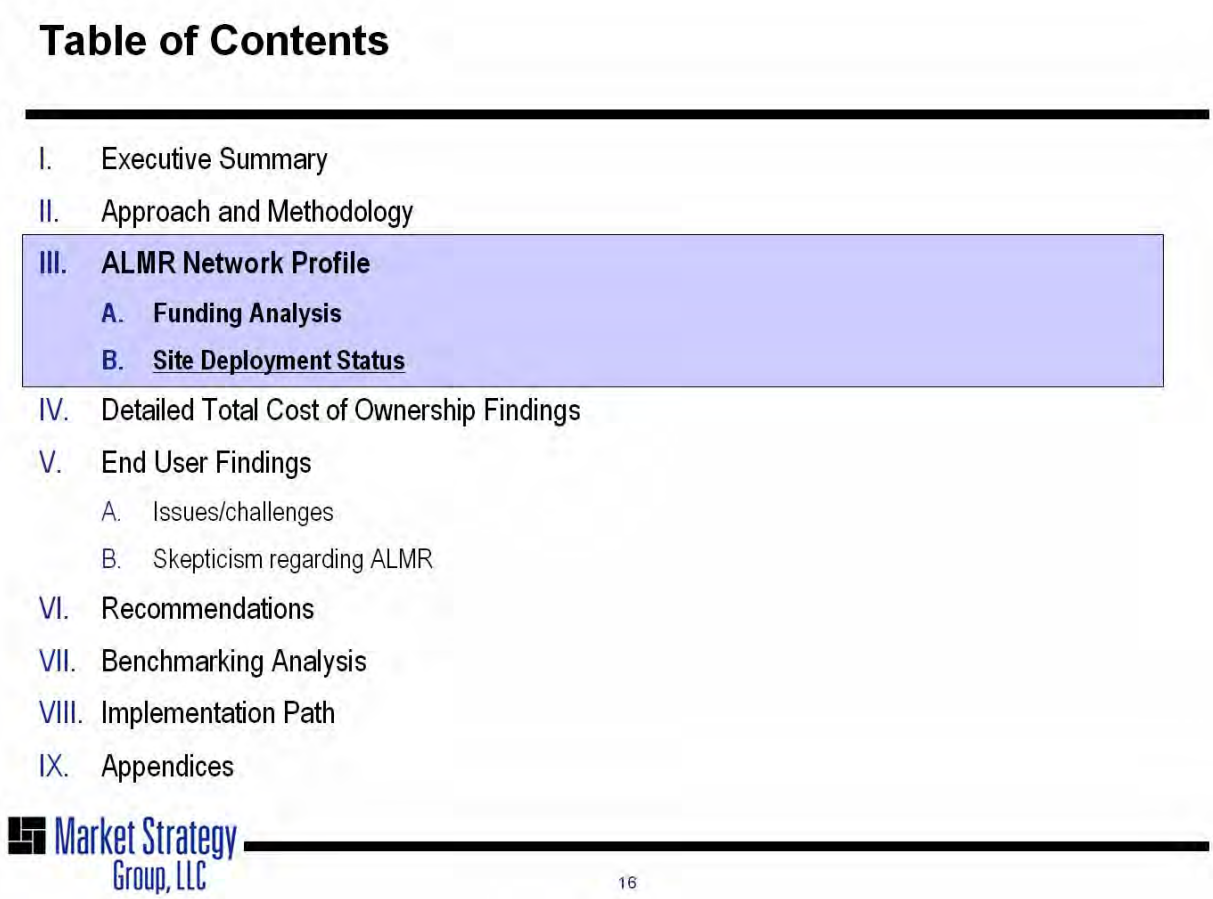
This slide excludes the unfunded amounts accrued prior to FY 06. These amounts were excluded because it could not be accurately determined from the personnel responsible for making the requests whether the request for FY06 included any "catch-up" amounts from previous years.

As mentioned earlier, the funding disparity as indicated in this slide should be remedied by pursuing a new funding strategy that is more equitable. The state and local organizations should consider new strategies for securing funding from their governmental entities. In addition, the non-DoD federal agencies need to become actively engaged in determining their commitment to a shared system approach, and their interoperability needs associated with the network. Funding strategies engaged in by these agencies could be based on the number of sites they will be using, or the number of subscribers units that they will bring onto ALMR. Identifying different funding sources for ALMR, would reduce the heavy reliance on the DoD to meet most system requirements, such as gateways and transportable systems.

This slide excludes any bond funding initiatives. The MOA is considering launching a bond issue, but because that application has not been completed, the amount has been excluded.

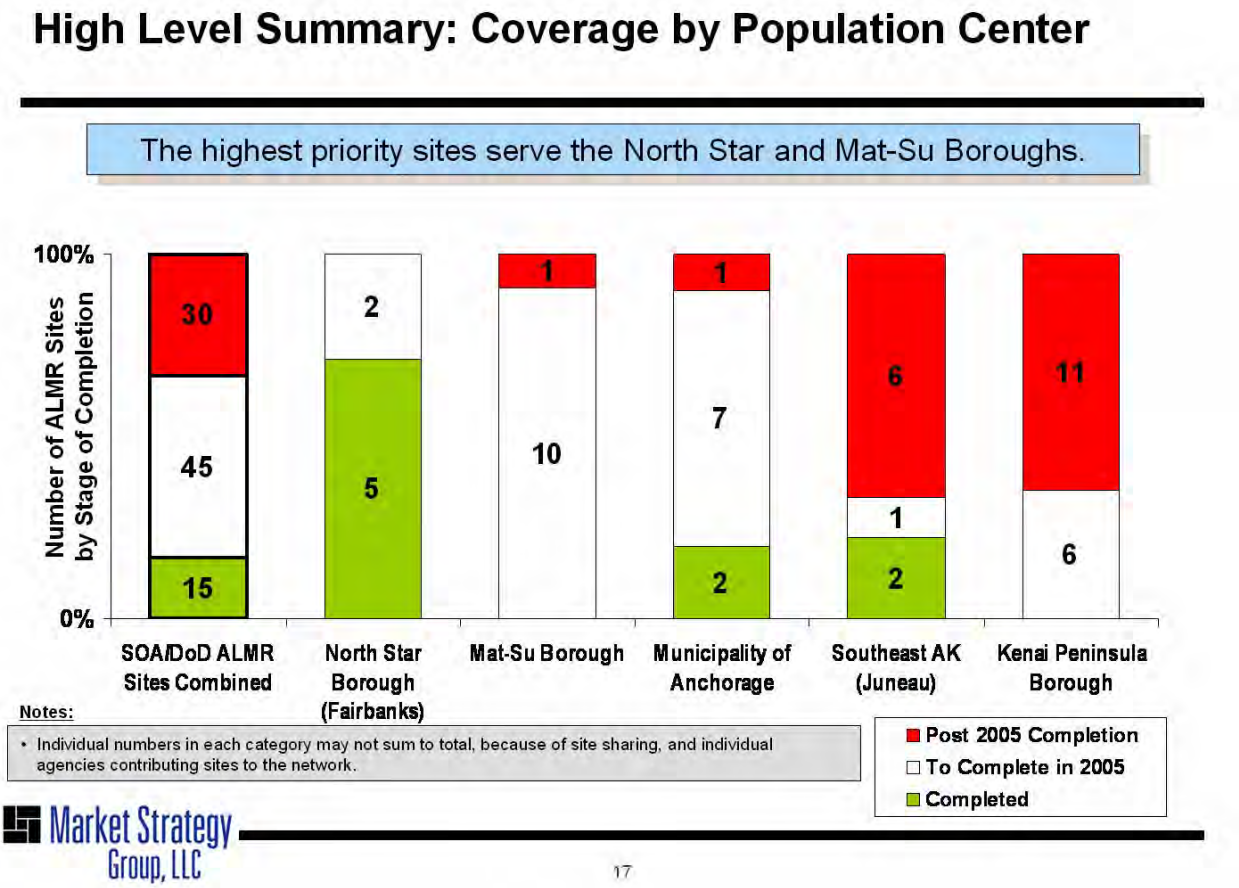
It is difficult to make an accurate comparison between the costs of building the trunked ALMR network and the funds spent to build the current conventional networks. However, according to a Motorola representative, the costs should be very similar, accounting for inflation. The key differences are larger shelter sizes and longer installation times for trunked networks (due to the equipment's enhanced feature functionality). In addition, the price of real estate has far exceeded the inflation rate, resulting in higher land acquisition and lease expenditures.

Slide 16



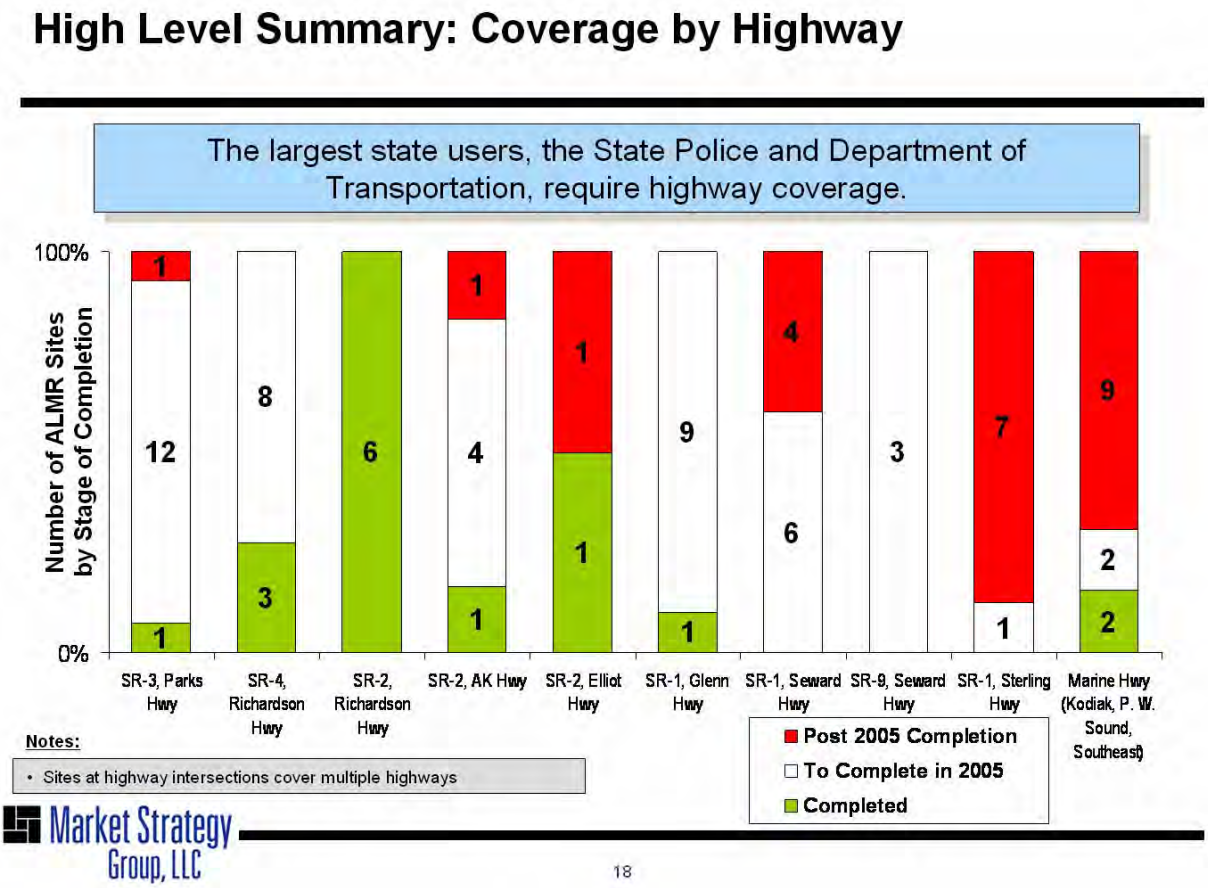
The next three slides capture the current status of the site ALMR site deployment. These three slides represent a compilation of multiple detailed Excel spreadsheets which form the core of the analysis.

Slide 17



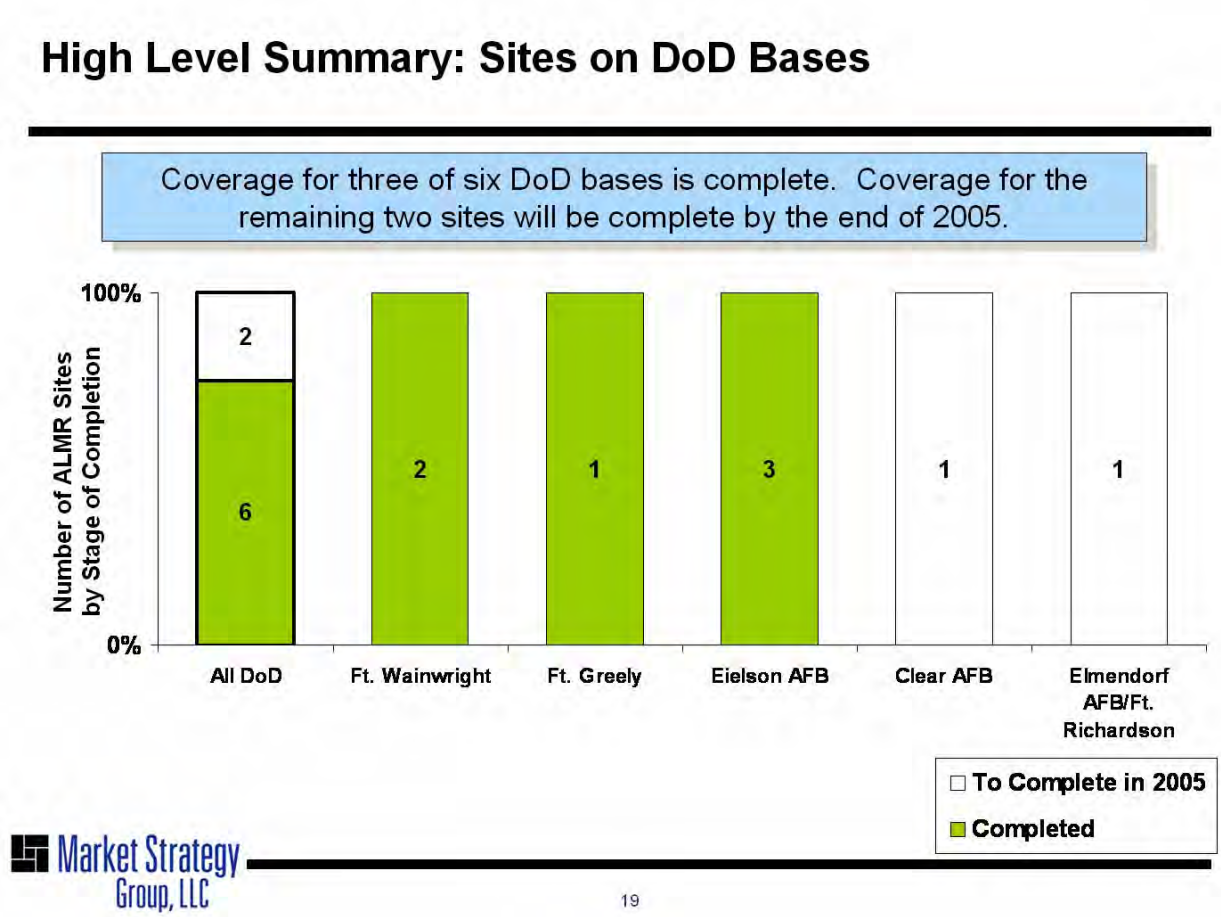
This slide shows the current site deployment by population center. Based on the current deployment, ALMR should consider “going live” in the Fairbanks area because more than 70% of the targeted sites are already deployed and the remainder will be deployed by the end of 2005. The next area to consider “going live” is the Mat-Su Borough. Though no sites are currently up, it is projected that 90% of their sites will be deployed by year’s end. These two areas should be the focus of short-term outreach efforts. Then by the end of calendar year 2005, the roadway system should be operational. These areas “going live” can provide “quick wins” by getting new users on the system and turning them into active ALMR advocates. This will help ALMR build momentum as the DHS exercise and beneficial use targeted dates approach. The outreach program for this exercise must include user training as ALMR will require subscriber units that are vastly different than the existing conventional units.

Slide 18



This slide arrays the site deployment data according to state highway coverage which could be beneficial to statewide users such as the DOT and AST. For example, ALMR is fully deployed along the Richardson Highway portion of State Route 2 (SR-2) and will be fully deployed along SR-4, SR-1, and SR-9 by year's end. In addition, there will 93% deployment along SR-3 by year's end. These areas provide statewide users, or other agencies that require an expanded area, an excellent opportunity to use ALMR immediately. For personnel who primarily travel along these routes, it should be a priority to train them on ALMR so they can start using it as soon as possible. One critical action that must be completed for the roadway system to be functional for State Trooper operations is an upgrade of the existing dispatch facilities, training, and conversion to the new infrastructure for day-to-day operations.

Slide 19



The DoD is doing an excellent job of deploying sites on their bases. They have already deployed 75% of their total sites, with the remainder scheduled for this year. The benefit to the DoD is that a large percentage of its user base can begin to access ALMR. Getting these users onto the system and converting them into active ALMR advocates will be a crucial component to assist in recruiting additional ALMR participants. The DoD has already engaged in an aggressive training program and is working transition and cut-over plans to ensure success.

Slide 20

Key Takeaways

- The DoD bases will complete coverage by the end of 2005.
  - The DoD will be providing equipment for an additional 42 sites in 2005, which are primarily located along the highway. DoD will also perform site preparation at 11 of these sites. Initially, the site preparation for these sites was the state's responsibility.
- The state should focus on the coverage needs of the Alaska State Troopers and DOT, and build out coverage accordingly.
  - The state and DoD should continue to work in a cooperative approach to complete site procurement and preparation.
- Several local communities have ALMR compatible base stations that are being used on conventional mode (e.g., Sitka, Mat-Su Borough, Ketchikan). ALMR should determine which of these local areas are candidates to add their sites to ALMR. This could be a quick way to increase coverage and adoption.

Market Strategy Group, LLC

20

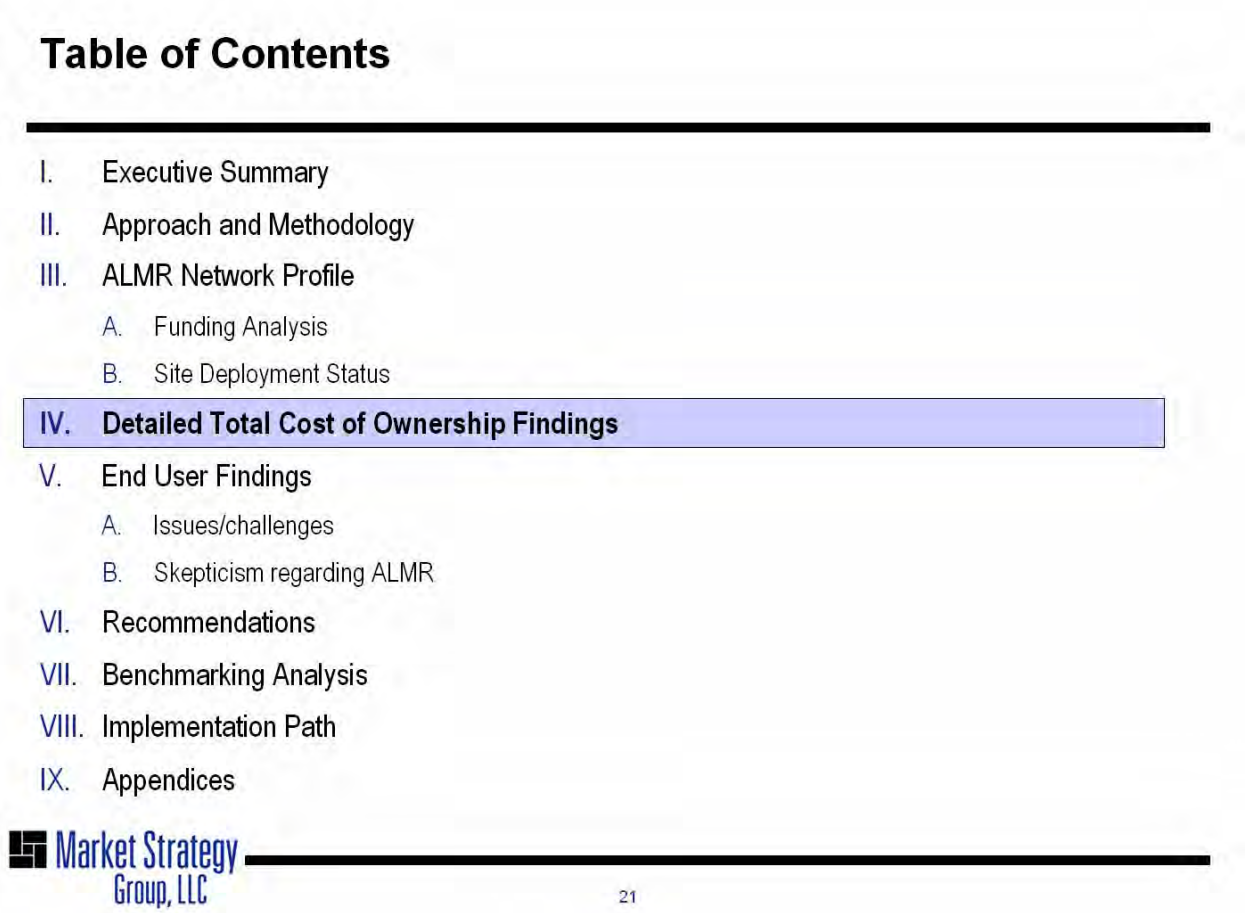
The DoD has taken the lead to fund sites that were not originally their responsibility according to the MOU between the SOA and DoD. By undertaking this additional financial responsibility, the DoD has allowed ALMR to keep to its schedule. If the supplemental funding and FY06 budget requests are granted by the State Legislature that will allow the ALMR program to reach beneficial use by years end. Full deployment by December 31, 2006, will still be reliant on state and local funding success and a solid spending plan and funding strategies being put in place that meet the stated funding needs.

From the state's perspective, it is important to continue the build-out along the state highway system. Securing as many state-wide users as possible and enabling them to communicate with other first responders will provide clear evidence of the power of interoperability, a cornerstone of the ALMR network.

There are approximately 10-12 more ALMR-compliant sites that local agencies may be able to contribute to the network. This would help expand the overall network coverage.

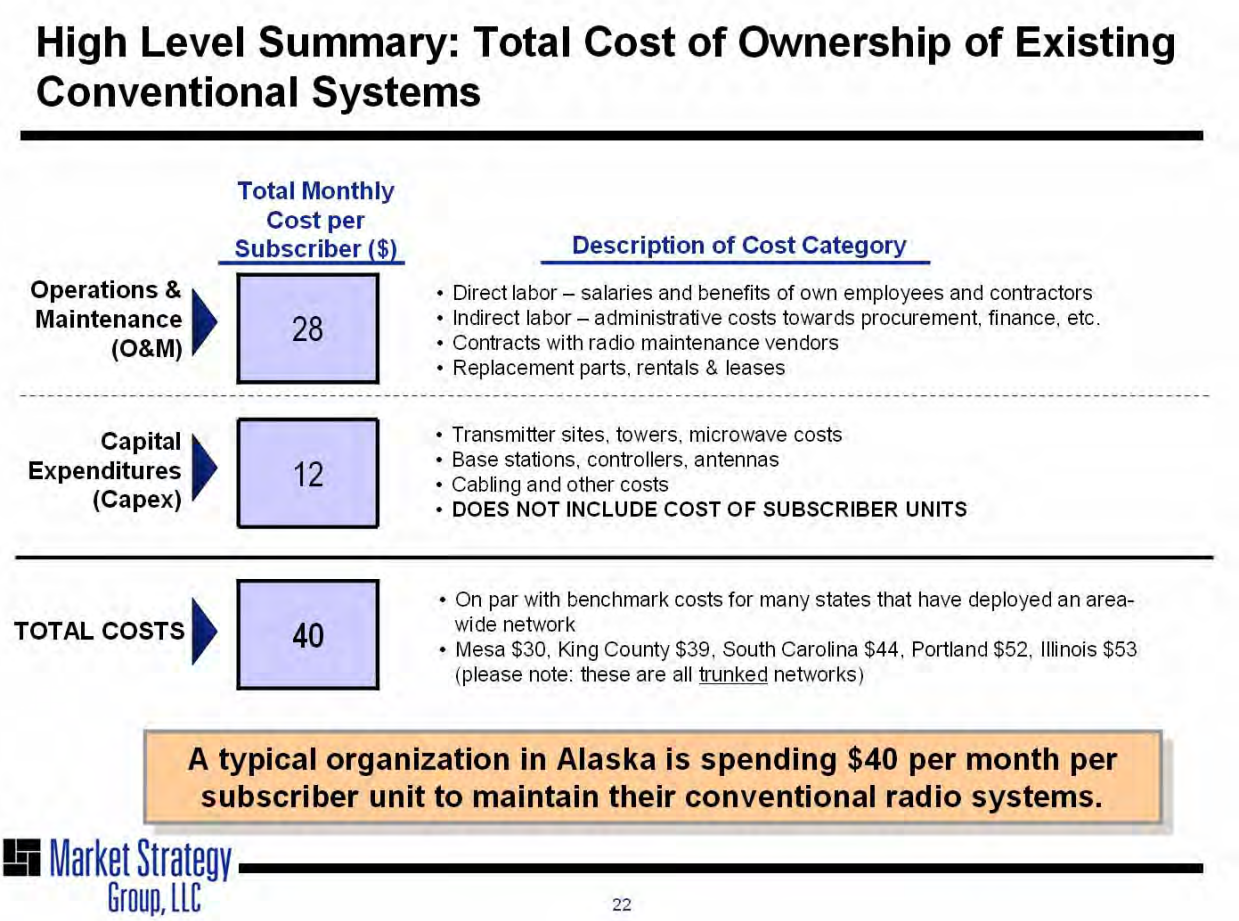
As mentioned earlier, it is imperative to pursue a funding strategy that fairly distributes the financial responsibility among all the users. Reaching a new balance of funding will demonstrate broad commitment to ALMR, enhance the PMO's effectiveness, and increase ALMR's credibility.

Slide 21



In the executive summary, the high level TCO figures of each segment's current conventional network were presented. This section is a deeper dive into these numbers.

Slide 22

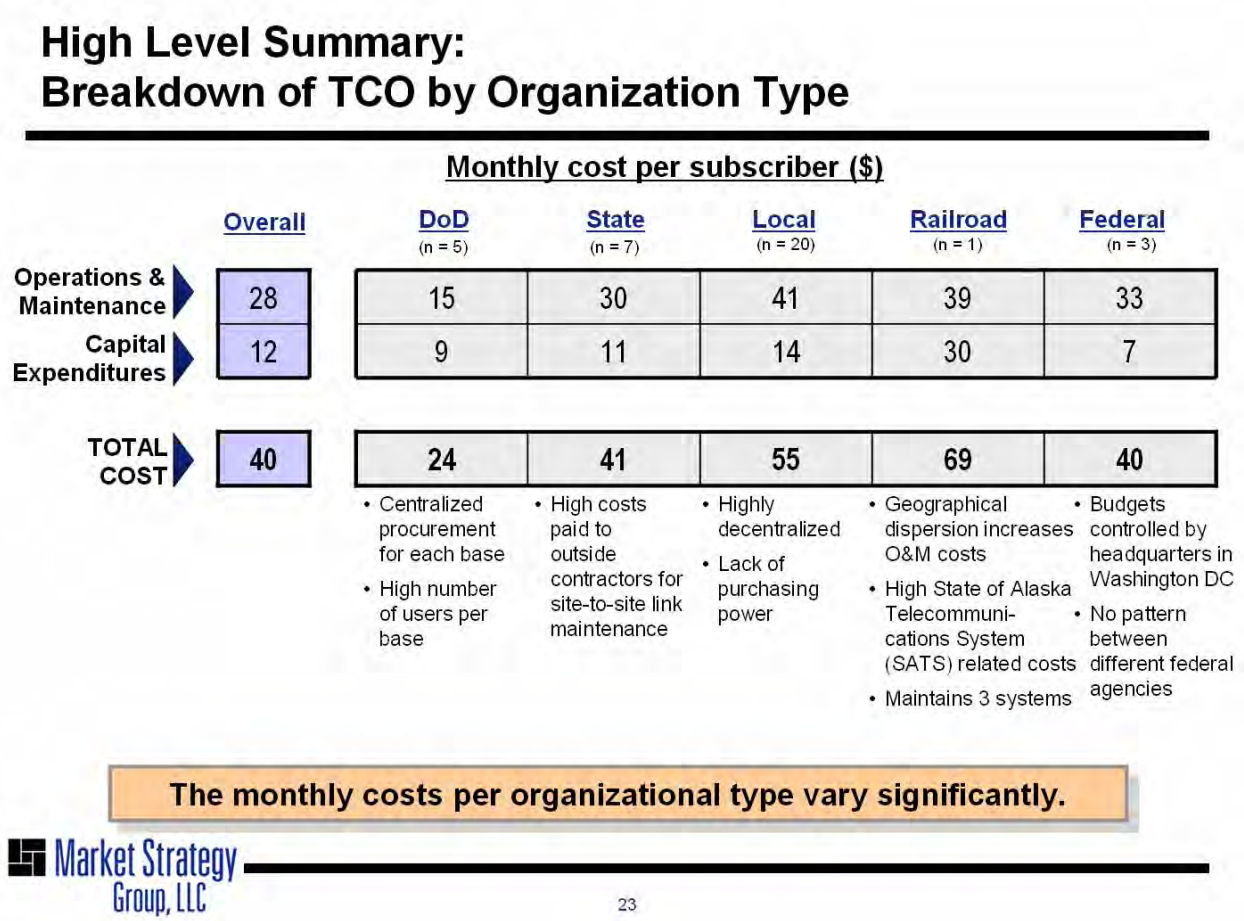


This slide represents the aggregated TCO for all current users on their conventional LMR networks. Please note the TCO excludes the cost of the subscriber units. The primary reason these costs were excluded is that for ALMR the cost of subscriber units is often covered by federal grant money from multiple areas: DHS, DOJ, and NIJ, among others. Due to this, it was determined that an “apples to apples” cost comparison, should not include subscribers units because many ALMR users will not incur the full subscriber unit cost to join the network.

For the capital expenditures, an average of an organization’s costs over the past 3-5 years was taken because this was identified as an appropriate period of time when upgrades/replacements to infrastructure components would be made. In anticipation of ALMR, many organizations reduced their conventional LMR network capital expenditures. Making the most recent fiscal year an atypical year for network investment, therefore, an average cost over the last 3-5 years provided a much more typical capital expenditure spending benchmark for comparison.

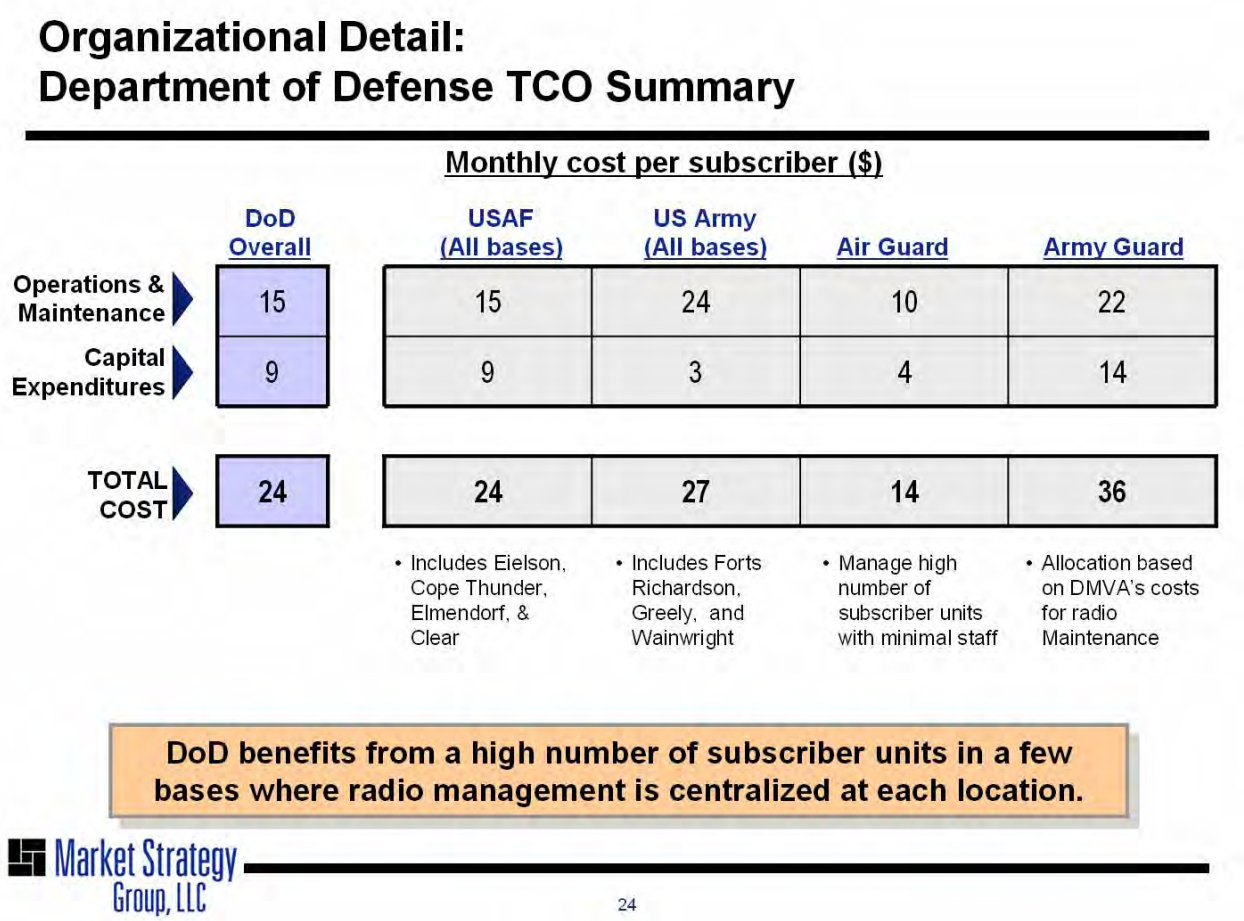
Based on the interviews conducted, an agency typically conducts a technology refresh every 3-5 years. However, the actual sites have a much longer life, ranging from 20-40 years and beyond.

Slide 23



The *n*= indicates the number of organizations that were interviewed in each segment. This slide is a repeat of the data that was presented in the Executive Summary. Per Commissioner John Madden from the TSA, if more non-DoD federal organizations participated in the interviewing process the total cost would probably "increase from $40 to $60 per unit."

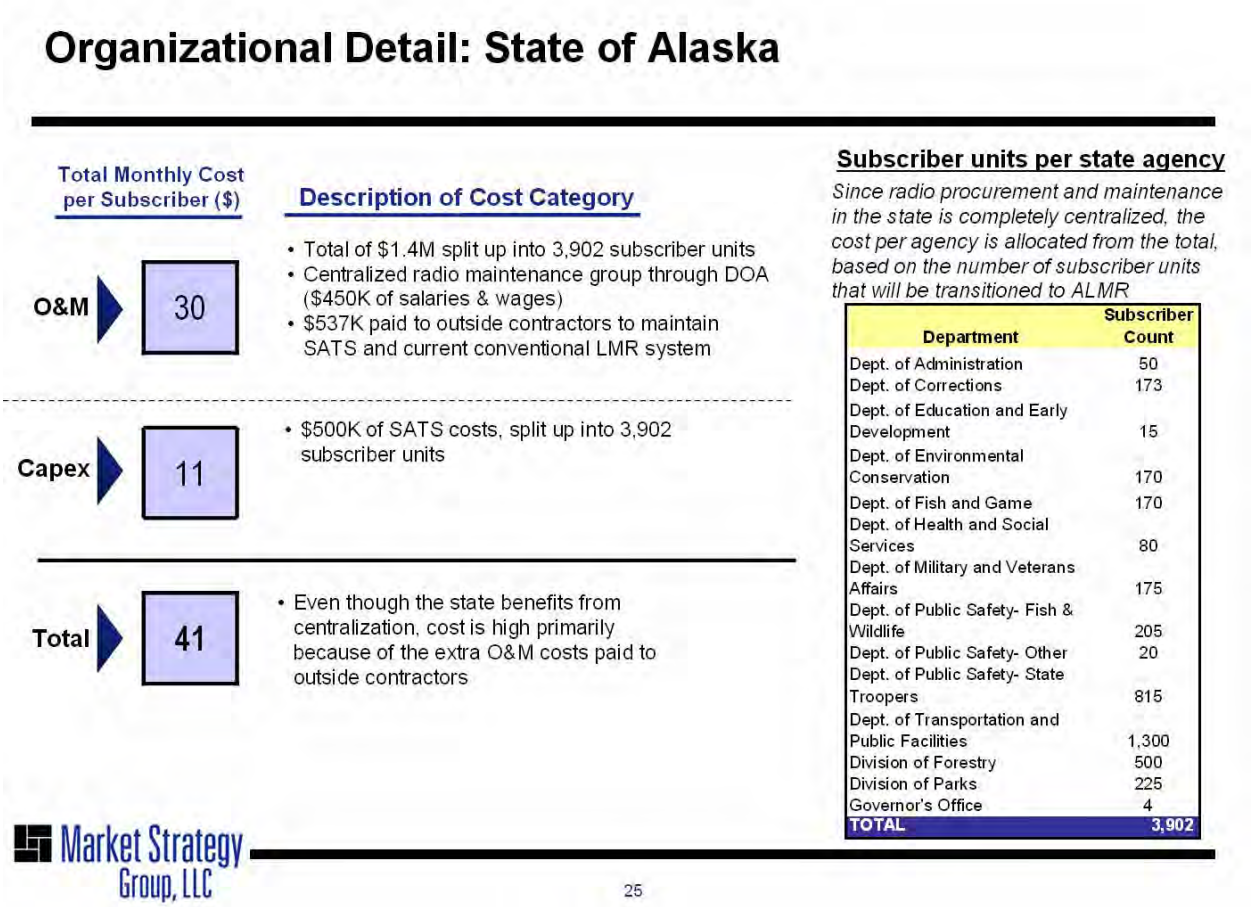
Slide 24



This financial analysis focuses on the DoD installations. A large majority of the users are at the USAF and the US Army bases. The Air Guard and Army Guard represent only 7% and 5% respectively of the total DoD user base. The Air Guard has such a low overall cost because they do not have many personnel involved in operating and maintaining their current network. In addition, due to the small size of their network, the capital expenditures remain relatively low.

The Army Guard can be considered an outlier in this instance because it appears that their approach to collecting and reporting LMR-related costs differs from the other DoD installations. It appears that the Army Guard may be including items other than the true LMR costs. After the initial analysis was completed, the Army Guard was approached again and they re-confirmed their data.

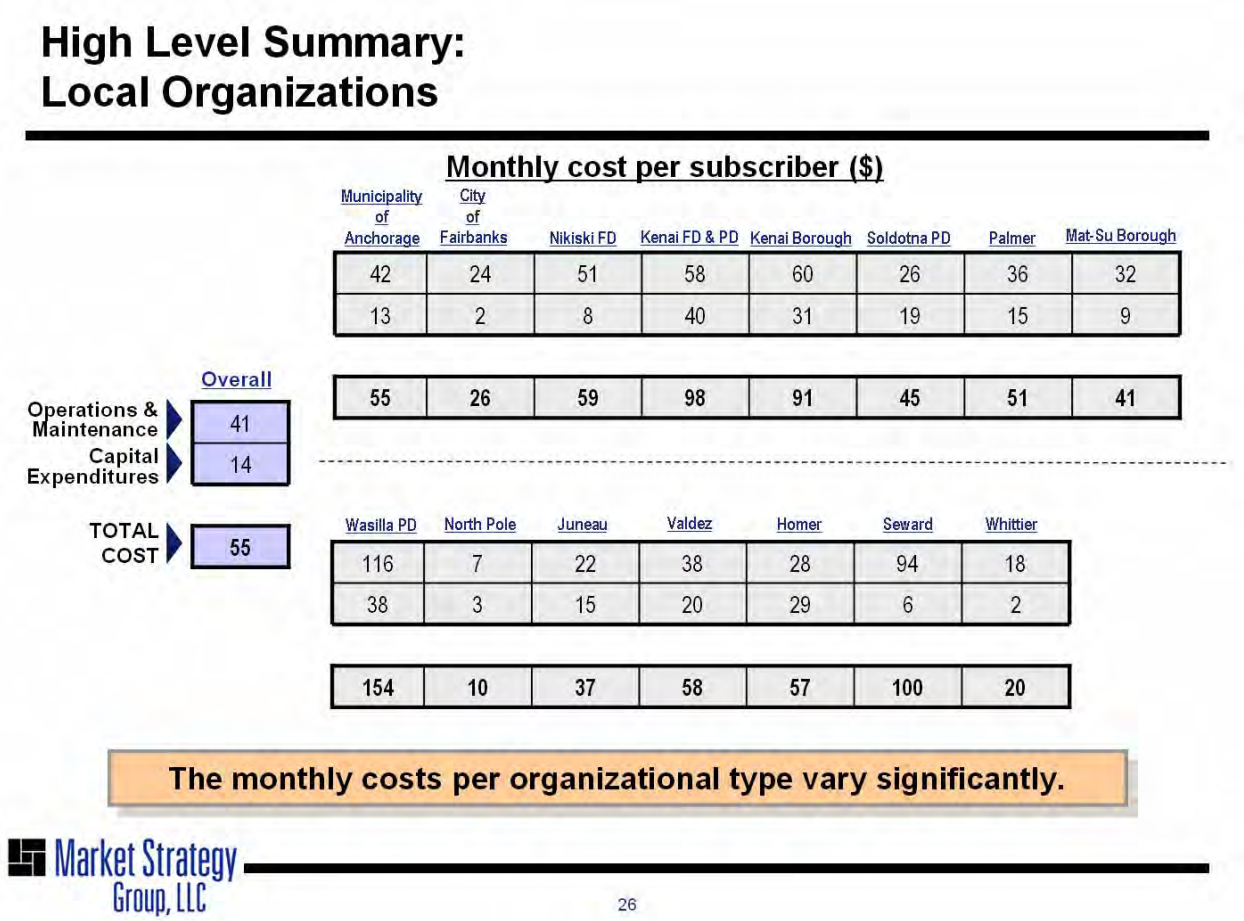
Slide 25



Please note that the number of subscribers listed on the right side of slide accounts for the total users that will be transitioned to ALMR. For example, the DOT has more than 1,300 current LMR subscriber units. However, much of their area of operation will be outside of the initial ALMR coverage zones. Therefore, they will need to maintain their existing conventional subscriber units to ensure coverage when they travel outside of the ALMR reach. This could create a short-term overall cost increase for the DOT.

The SATS-related data was provided directly by the DOA.

Slide 26



This slide summarizes the current conventional monthly subscriber unit costs for each of the local agencies that were interviewed. Where appropriate, departments within a city/borough were aggregated. For example, in Kenai, the fire department and police department figures were aggregated. Similarly, the data for the Municipality of Anchorage includes both the municipality's data plus the Municipal Light & Power data. Based on the $55 average, 8 organizations exceeded the average, and 7 were below the average. Every outlier, Kenai, Wasilla, Seward, and North Pole, was re-contacted to re-confirm their data. This data reflects their re-confirmed amounts.

Detailed information on each individual agency that was interviewed is summarized in the appendix. Each organization has a dedicated slide which summarizes the quantitative as well as qualitative data that was collected during the interviews.

Slide 27

High Level Summary: Local Organizations

- There are a large number of potential ALMR subscribers in local organizations
- Their current collective total spent on radio operations is $3.4 million annually

Total number of subscribers

Organization	Number of Current Conventional Subscriber Units
Municality of Anchorage (MOA)	2,700
Municipal Light & Power	501
Fairbanks Police Dept	85
Fairbanks Fire Dept	65
Nikiski FD	49
Kenai Fire Department	65
Kenai Police Department	52
Kenai Burough Emergency Services	39
Kenai Fire & EMS	90
Soldotna PD	26
Palmer PD	145
Mat-Su Burough	544
Wasilla PD	55
North Pole Fire & Police Dept	70
City of Juneau, PD, FD, roads	220
Juneau Airport	50
Valdez Police Dept	23
Valdez Fire Dept	90
Homer	90
Seward	112
Whittier	37
TOTAL	5,108

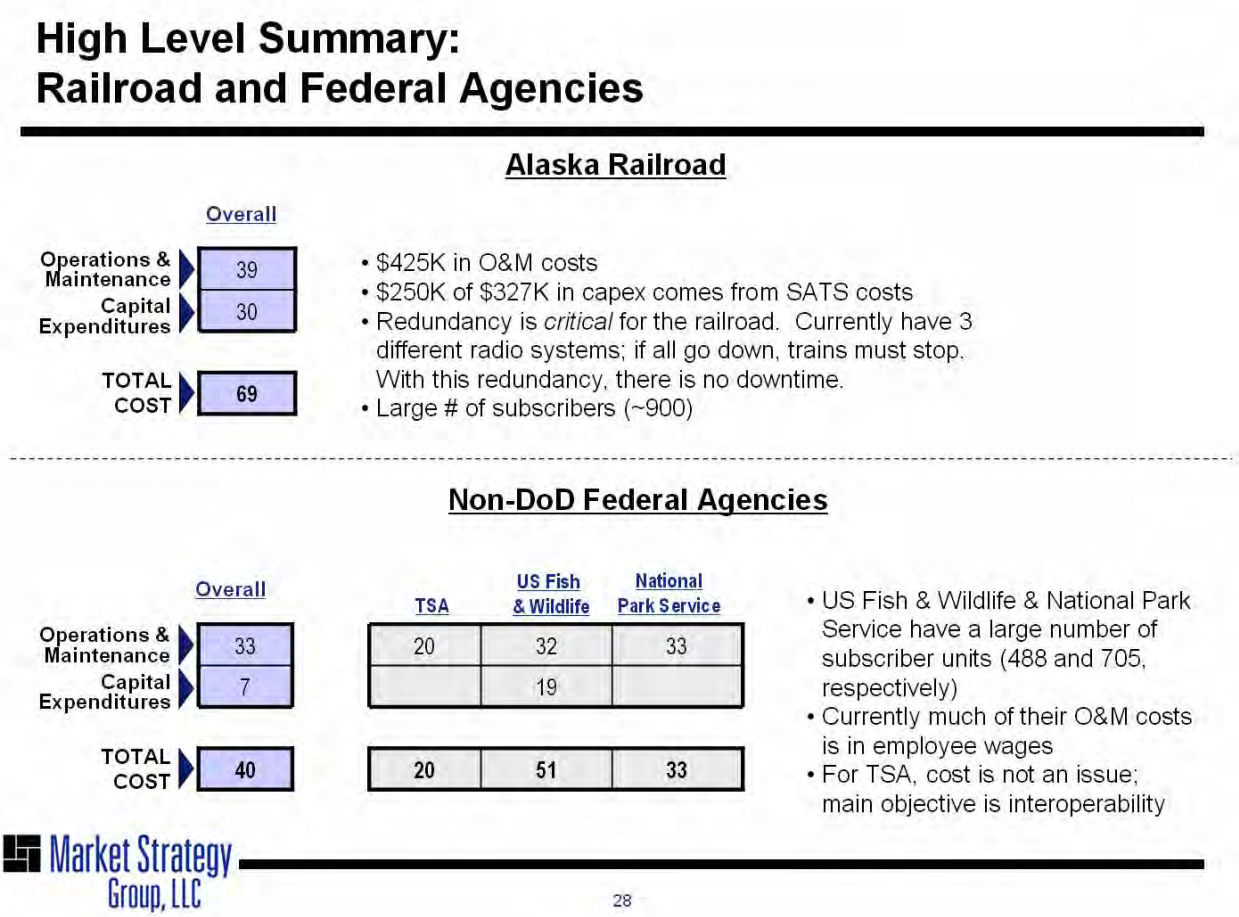
Market Strategy Group, LLC

27

The number of current subscriber units for each local agency was also captured. (It was decided not to include this information in the previous chart because it would make it too confusing to read). Approximately 63% of the subscriber units are affiliated with the Municipality of Anchorage (MOA). Due to the MOA's deployment of a separate, standalone 800 MHz network (that will be connected to ALMR via a gateway), a large majority of their subscribers will most likely not be joining ALMR. However, they will require some ALMR-compliant subscriber units. The total amount of potential ALMR-compliant subscriber units that will be required, after deducting the Anchorage amount will be 1,907.

Please note that this total does not include all the volunteer fire departments figures as well as any boroughs/municipalities that are outside of the proposed ALMR area. Though several respondents were asked about the amount of subscriber units that volunteer fire departments have, the best estimate received was 1,000 units. It has not been determined how this amount is allocated amongst all the volunteer departments. In addition, the migration path on when these users would join ALMR has not yet been determined.

Slide 28

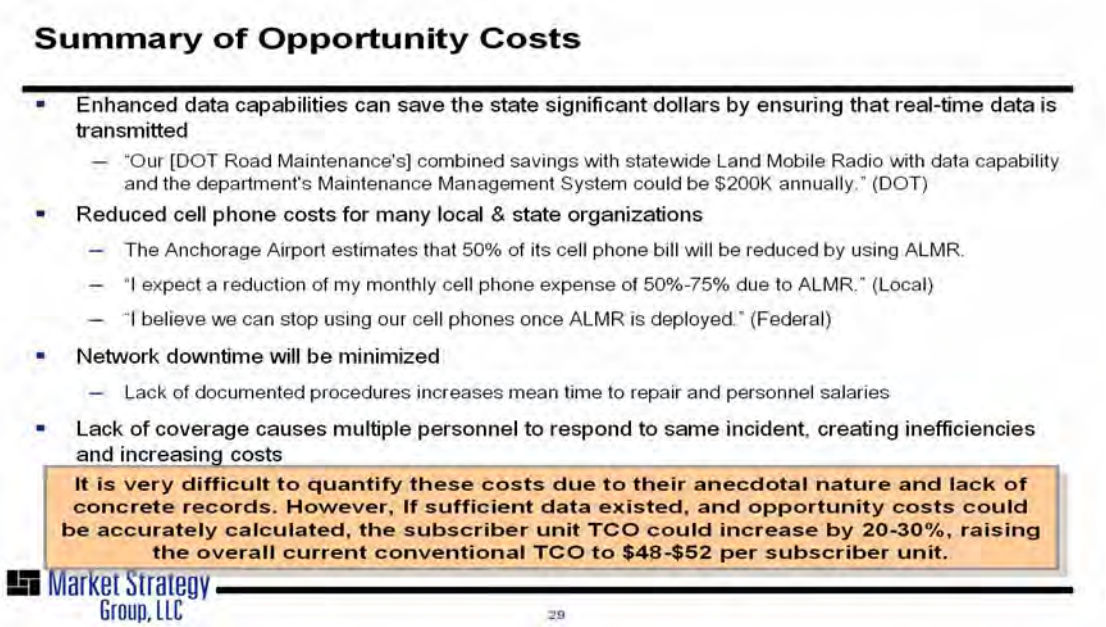


The primary reason that the Alaska railroad has such high per unit subscriber cost is due to their maintaining three separate radio networks. Their costs will continue to be higher in an ALMR environment because of their requirement to have redundant networks. However, it may be possible for the railroad to migrate a portion of their current users onto ALMR, and possibly have ALMR replace one of their conventional networks.

As mentioned earlier, only three non-DoD federal agencies were interviewed. Due to small sample size, the total cost for this segment may not reflective of their overall cost. In addition, based on the agencies interviewed, it appears that collectively they will retain a large percentage of their conventional subscriber units because they need to communicate in areas that will not be covered by the initial ALMR deployment. If additional non-DoD federal agencies participate in the interview process, their data would be reflected in a supplemental report/appendix.

The actual number of non-DoD users may be much more than were interviewed. As indicated earlier in the report, several of theses agencies declined to be interviewed, thereby a pool of potential users were not sampled.

Slide 29



Opportunity costs are defined as the costs of not operating the radio network in an optimal manner. For example, if user training is inadequate, then a higher rate of user errors may occur. User errors typically translate into a cost. Another example is lack of preventative maintenance. If the radio network is not maintained on a regular basis, there is a higher incidence of network downtime. Once again, there is a cost associated with this downtime such as a large payment to an outside contractor to perform the work, or being unable to route a patrol car to the correct location. The locals would most likely have the highest amount of opportunity costs.

In addition, opportunity costs may consist of costs which may be reduced/displaced if a new network is acquired. For example, with ALMR, many potential users indicated that they would reduce either their cell phone or paging expenses. These costs, if captured would have a positive financial impact on an organization's decision to join ALMR.

Because there was insufficient record-keeping of costs associated with the current conventional network, calculating opportunity costs proved too difficult. However, based on the anecdotal evidence about opportunity costs, it can be safely estimated that the aggregated monthly subscriber unit cost for the current conventional network of $40, could be increased by 20-30%. Using this opportunity cost metric, the estimated monthly subscriber unit cost would be:

Segment	Estimated TCO Including Opportunity Cost
Overall	$48-$52
DoD	$29-$31
State	$49-$53
Local	$66-$72
Railroad	$83-$90
Non-DoD Federal	$48-$52

Slide 30

SAFECOM/PSWN Interoperability (I/O) Standards

	Benefits	Issues	Best Applications
Level 6	Instant interoperability Full system features and range Talk to each other via infrastructure or talk around Backward compatible	Funding Region must be operating within a standard Extensive pre-planning	Small to massive scale events Urban to rural locations Any band/bands
Level 5	Connects to multiple types of systems Instant Interoperability Full system features and range	Extensive pre-planning May not be cost-effective for infrequent applications	Small to large scale events Cross band Limited response areas
Level 4	Radios talk to each other via link established by dispatcher, unmanned interface box, or mobile apparatus Cost efficient Connects different systems/vendor's brands	Overlapping coverage required Multiple systems required Loss of key public safety features Console/field intervention may be required to "set up on the fly"	Small to moderate scale events (1-2 sites or 2-4 agencies) Preplanned events to avoid channel crowding
Level 3	Agencies manually switch to assigned frequencies when instructed to do so Cost efficient Available almost everywhere	Radio reprogramming required Frequency dependent Requires conventional and trunked systems within the radio	Small to moderate scale events Emergency operations/unplanned events (channel plan required in advance) Works for urban/rural
Level 2	For situations when no infrastructure is available, compatible radios talk directly to each other in conventional mode Cost efficient Easy to implement	Limited range Requires compatible systems	Small/pre-planned events Emergencies only
Level 1	Easy to implement (agencies physically exchange radios with each other upon arrival at scene) No administration required	Limited range Slow to set up exchange	Immediately following disaster Small/pre-planned events with key players coordinating

Market Strategy Group, LLC

30

Source: Motorola's Six Levels of Interoperability

The highest interoperability level that current conventional networks are at is Level 2. Many agencies when interviewed felt that they had some level of interoperability, some were satisfied with the current level, most others were not. ALMR will provide Level 6 interoperability, the highest level available with today's technology. For those agencies which do not join ALMR, but only want to secure a gateway into the network, the highest level of interoperability they could achieve is Level 4.

From an outreach perspective, potential users need to be educated on the different levels of interoperability. This is very crucial, because the survey results indicated that overall interoperability is most important reason for joining ALMR.

It is important to note that interoperability at Level 1-2, is not sufficient to respond to a post 9-11 crisis. This point must be communicated to potential users, because they mistakenly believe that their current conventional systems allow them to appropriately respond in the post 9-11 environment. The safety and security of the first responder is more vital than ever, and the ability to communicate securely, on-demand and in real time has never been more critical.

Slide 31

ALMR Benefits Obtained by each User

Feature	Current Conventional Network	ALMR
Interoperability	Level 1 or 2	Real-time, on-demand, Level 6 Interoperability with no gateway required
Encryption	Inconsistent, non-standard applications are in place across different agencies. Could possibly utilize DES, DVP, among others.	P25 compliant. Encryption capabilities at (AES) Advanced Encryption Standards. Could utilize multiple encryption keys.
Re-keying	Manual re-keying if additional dedicated conventional equipment is employed	Over the air re-keying on existing trunk infrastructure, no additional dedicated equipment
Data Capabilities	Paging, but no data capabilities	Data at 9.6kbps with a migration plan to secure hi-speed data at 4.9GHz with WAN/PAN/LAN capabilities
Redundancy	Limited - Constrained by a single radio channel	Available - Multiple communication channels exist
Security Level	Inconsistent applications/standards	Type 1, 2, or 3 encryption available for classified information
Wide Area Coverage	None	Wide area coverage along major highways in the state
Future FCC Narrowband Requirements	Does not comply	Complies

Market Strategy Group, LLC

31

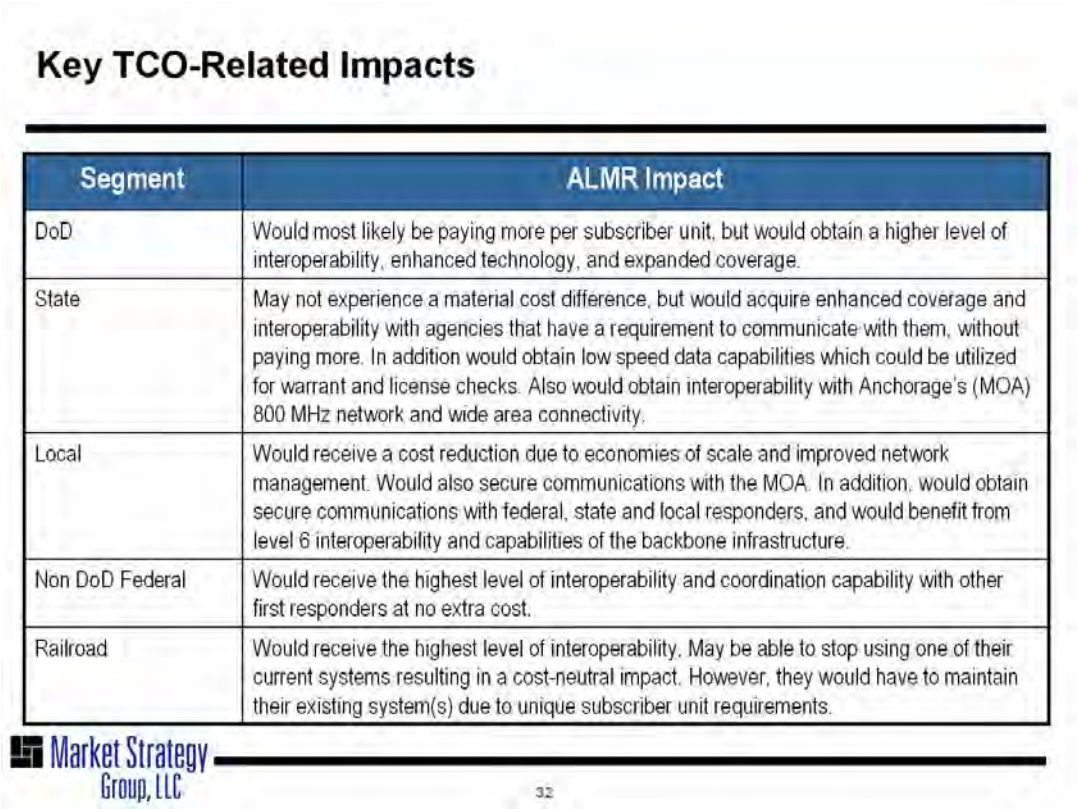
Source: Motorola, ALMR PMO

This chart provides a high level comparison of the benefits of joining ALMR. Additional benefits, containing a more technical analysis, are in the appendix. From an outreach and educational perspective, it is important to communicate all of these benefits to users, especially those that are price sensitive, such as local agencies. The message could be “Though you may be paying a bit more for ALMR, you will be receiving a premium service containing many critical standardized public safety communications related upgrades from your current conventional network.”

A key point is that all state and local users must be off their current network frequencies by 2013 because these frequencies do not meet the FCC’s narrowband requirements. ALMR meets this FCC requirement.

Another key factor to stress is that the current conventional network cannot provide the interoperability safety and security required for first responders in a post 9-11 environment. ALMR has proven its’ ability to successfully support Public Safety First Responder communications needs in the post 9-11 environment.

Slide 32



Key TCO-Related Impacts

Segment	ALMR Impact
DoD	Would most likely be paying more per subscriber unit, but would obtain a higher level of interoperability, enhanced technology, and expanded coverage.
State	May not experience a material cost difference, but would acquire enhanced coverage and interoperability with agencies that have a requirement to communicate with them, without paying more. In addition would obtain low speed data capabilities which could be utilized for warrant and license checks. Also would obtain interoperability with Anchorage's (MOA) 800 MHz network and wide area connectivity.
Local	Would receive a cost reduction due to economies of scale and improved network management. Would also secure communications with the MOA. In addition, would obtain secure communications with federal, state and local responders, and would benefit from level 6 interoperability and capabilities of the backbone infrastructure.
Non DoD Federal	Would receive the highest level of interoperability and coordination capability with other first responders at no extra cost.
Railroad	Would receive the highest level of interoperability. May be able to stop using one of their current systems resulting in a cost-neutral impact. However, they would have to maintain their existing system(s) due to unique subscriber unit requirements.

Market Strategy Group, LLC

32

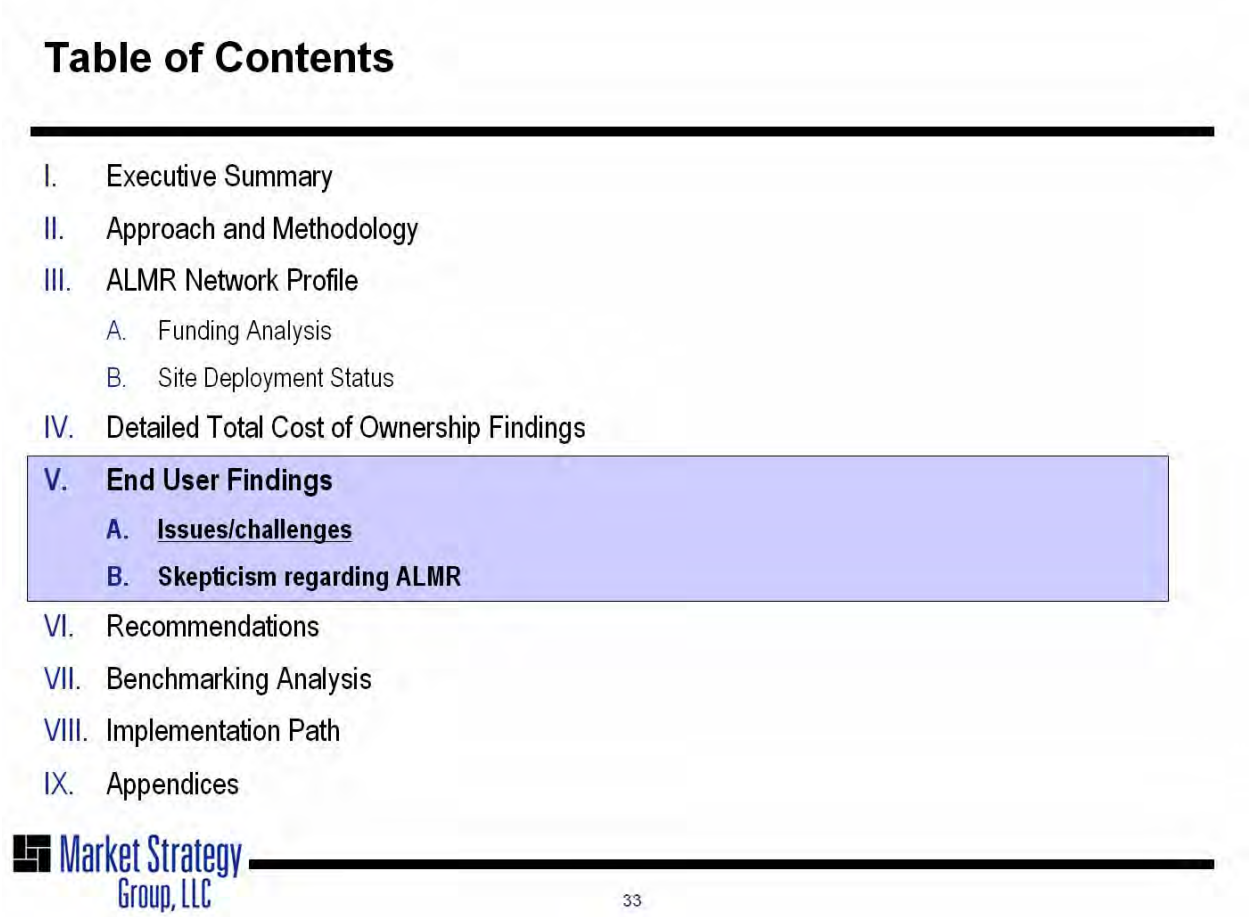
Each segment has unique needs and preferences for joining ALMR. For certain segments such as the DoD, they are willing to incur higher costs associated with implementation, operation, and maintenance for ALMR because they require the benefits of a standards based secure interoperable system, new features such as over the air re-keying, enhanced interoperability with other federal, state and local agencies, enhanced coverage, etc.

For state users, the cost difference may not be material, but they will experience true Level 6 interoperability. This is an especially important feature as a large number of agencies from all the user segments have a very strong desire to interoperate with the State Troopers. For the State Troopers, the technology increases significantly their safety and security during day-to-day operations as well as provides the level of security and interoperability needed to meet the post 9-11 missions and roles they now undertake. Further the Department of Transportation benefits significantly from the state of the art infrastructure and its ability to support their "Intelligent Road System Network" requirements, streamlining operations, and providing increased safety of operations.

For local users, some agencies will be able to secure a cost reduction. However, the driving factor for joining ALMR would be interoperability with the state as well as the MOA, which has detailed criminal databases that other organizations would like to access. Another important component for locals is that ALMR will provide cost certainty. When the cost share plan is implemented they will know what the 2-way radio costs will be on an annual basis, and can budget accordingly; securing funds from grants, bond issuances, or federal/state/local earmarks/inserts.

For the railroad, there may be a cost reduction because ALMR might enable them to stop maintaining one of their three conventional networks.

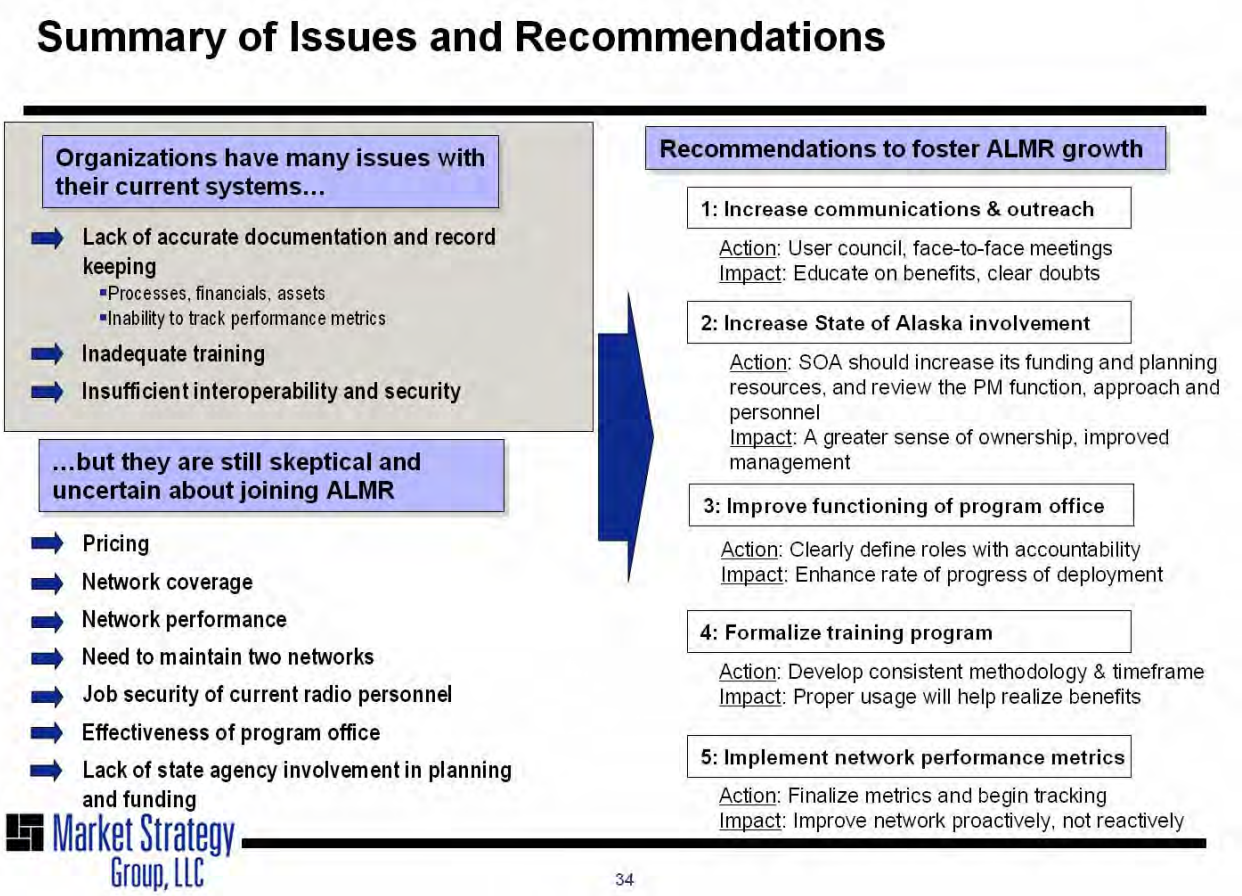
Slide 33



With this section, and the subsequent ones, the focus changes from a quantitative, TCO read-out, to a more qualitative discussion focused on capturing and analyzing respondent feedback. This next section focuses on three key areas: issues with users' current conventional network, concerns/skepticism potential users have regarding ALMR, and recommendations for improving the performance of the ALMR network and the ALMR PMO.

These sections represent an independent, unbiased perspective on the ALMR program. A majority of the potential users found the program unique and beneficial, but have critical issues which the ALMR Executive Council and the PMO, and the soon-to-be developed users group must address.

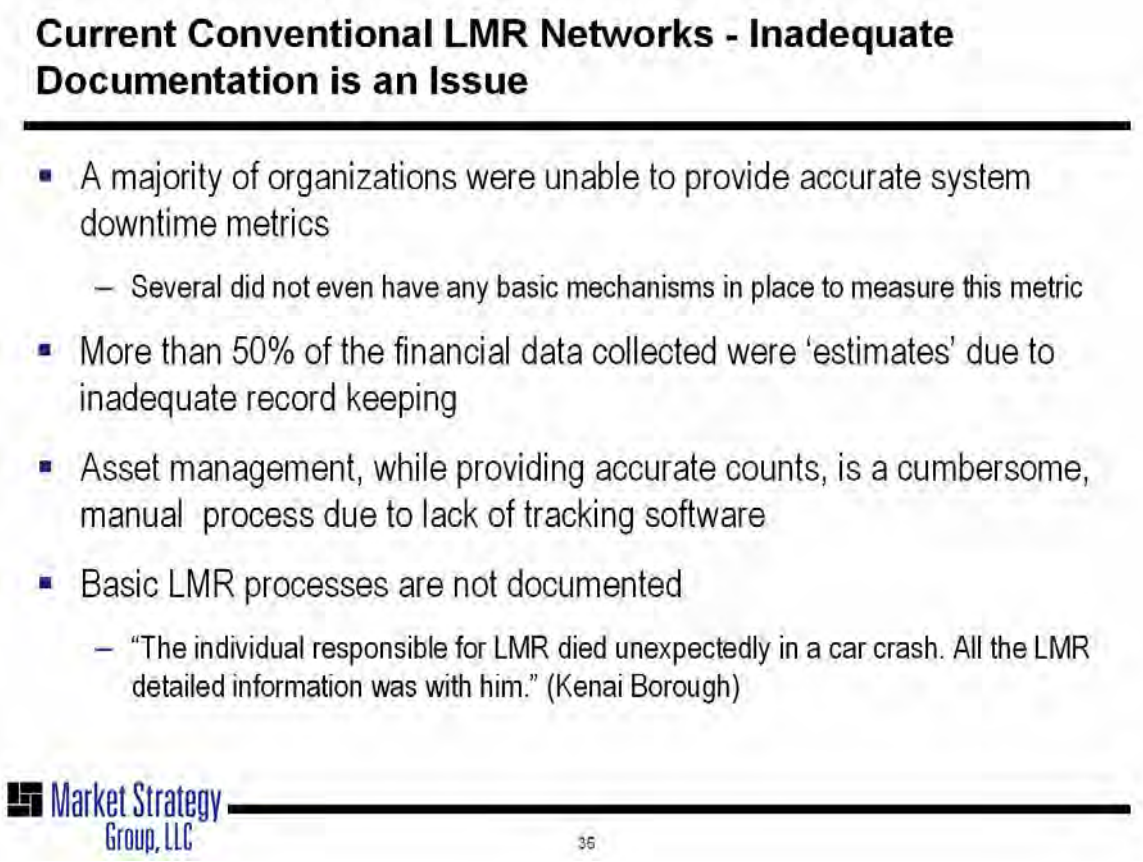
Slide 34



This is an important slide because it summarizes the key points of the next two sections. It should be read from left to right. The left side identifies the problems users are having with their current network and categorizes concerns they have about joining ALMR. The right side lays out five specific recommendations to address these concerns/problems. These five recommendations are identical to the ones listed in the Executive Summary. These recommendations should all be pursued; *Number 1* is not more important than *Number 5*. They are of equal importance.

The next set of slides elaborates on the issues highlighted in the gray shaded area.

Slide 35



As discussed earlier in this report, calculating opportunity costs was not possible due to a lack of adequate LMR-related documentation. There were several reasons why adequate documentation did not exist: the organization had no requirement to develop documentation, the individual(s) responsible for LMR did not have the expertise to develop documents, or when the individual responsible for LMR had the expertise to develop the documentation, there appeared to be concerns regarding their own job security if the documentation was actually created.

In instances where documentation existed, it was more common to use a manual, as opposed to automated process to document LMR-related issues. For example, initially it was difficult for some organizations to provide an accurate subscriber unit count because their asset management was not automated or up to date.

In an ALMR environment, inadequate documentation should be minimized because the network management function may be centralized, and appropriate reporting mechanisms will be instituted and adhered to. The current Managed Services contract the DoD has initiated includes the following: Wrap Around Warranty, preventive maintenance checks, and automated asset management practices, which should significantly improve the LMR practices of most agencies.

Slide 36

Current Conventional LMR Networks - Delivering Comprehensive Training is a Concern

- Less than 20% of respondents have a formalized training program
  - Respondents primarily rely on 'on-the-job training' for both new and existing users
- A large majority of respondents do not offer a selection of multiple training channels, such as online, DVD/CD, or classroom
- Several organizations do not establish formal training plans or set aside dedicated training funds
- Many organizations are not aware of the "free" training that vendors can provide
- Consequently, user errors are common. . .
  - "Most issues are user issues. Even with old radios, there are a lot of user errors." (Local Fire Department (FD) / Police Department (PD))

Market Strategy Group, LLC

36

Training is a critical element and is largely absent in a majority of organizations' current conventional networks. Inadequate training can lead to more user errors, which translates into additional opportunity costs.

Another key area is that organizations are not leveraging multiple approaches to delivering training. For example, in Alaska where it is difficult to travel, training options such as e-learning or distance learning are not being deployed in a wide-spread manner. Sharing DVD/CDs would provide a more cost-efficient approach to training, and would most certainly be an important addition to the frequently utilized "on-the-job training."

When classroom-based training is conducted, frequently it is not delivered by someone who "wears the same uniform", as the attendees. A sworn officer should be enlisted to train other sworn officers. This could hinder learner retention and applicability if the trainer is not credible in the eyes of the trainee.

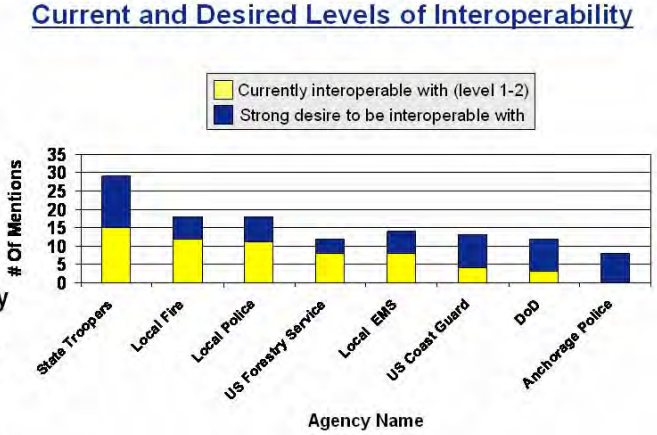
Another key concern is alerting potential trainees, and other stakeholders to the availability of training. A recently delivered 1-week course on ALMR Fleet Mapping was poorly attended as a result of lack of interest or failure to inform potential trainees about the course in a timely manner.

Slide 37

Current Conventional LMR Networks - Interoperability Needs to be Improved

Respondents were asked about their perceptions regarding which agencies they were currently interoperable (I/O) with (most likely at level 1-2), and which agencies they have a strong desire to be I/O with.

- **Current Situation: Low Interoperability**
  - Current interoperability is mostly limited to state troopers and their local police & fire departments
  - This level of I/O is primarily limited to swapping radios and/or establishing a talkaround plan
- **Desired Situation: Much higher interoperability**
  - Many organizations expressed a 'strong desire' to be interoperable with AST, DoD, Coast Guard, & Anchorage Police
  - The future desired state of I/O would be much more enhanced than the current levels
  - Several organizations *still* are not interoperable with local police & fire departments



Market Strategy Group, LLC

37

The interviewee's perception is that they have adequate interoperability. The reality is that their level of interoperability is only at Level 1-2, which is not sufficient in a post 9-11 environment. This type of interoperability cannot be achieved with the conventional networks. The level of interoperability required in a post 9-11 environment can be achieved with ALMR's real-time, on-demand, secure Level 6 approach. Of course, there is a cost for interoperability, and agencies must answer the question: How much is Level 6 interoperability worth?

Based on the current data, there are some local police, fire, and EMS agencies that cannot even interoperate within their own jurisdiction.

In addition to interoperating within their own jurisdictions, agencies expressed a strong desire to be interoperable with the: State Troopers, DoD, Coast Guard, and Anchorage Police. Across all user segments, interoperability appears to be most salient, compelling value proposition for joining ALMR. Just as important as needing to be interoperable, is the level at which interoperability can be achieved. Level 6 meets the public safety set standards, and provides the safety and security, and secure interoperable features and capabilities required in the current environment as defined by the Public Safety community nationwide.

Slide 38

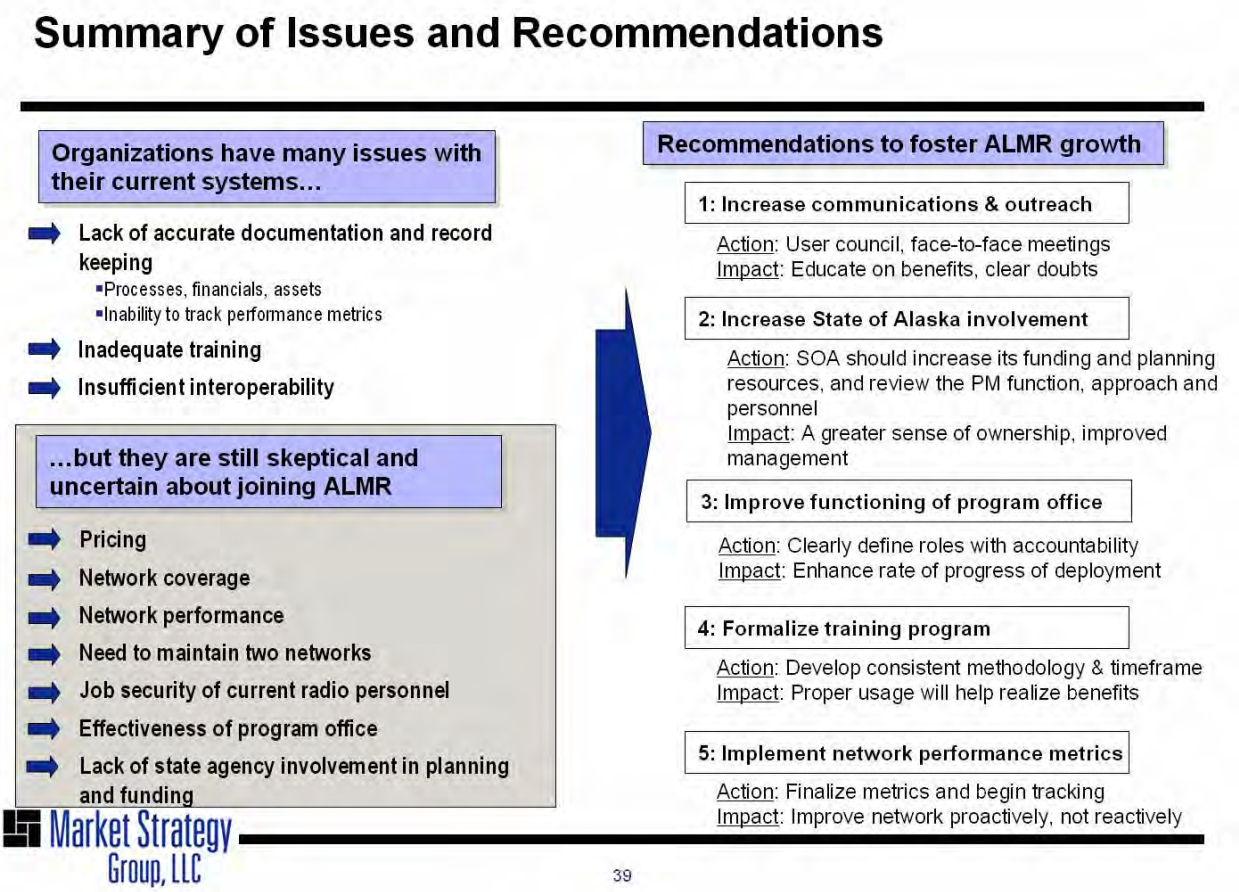
Table of Contents

Market Strategy Group, LLC

38

Next we are going to switch gears and address concerns that potential users raised regarding ALMR. Based on their feedback, there is still a large amount skepticism regarding ALMR's ability to deliver on their promised commitments.

Slide 39



We have just discussed problems that users are having with their current conventional systems. Next we are going to transition to a discussion of the issues/concerns these same users have with the proposed ALMR solution. Though the ALMR PMO may already be aware of some of these issues, it is important to clearly articulate the issues that ALMR must confront.

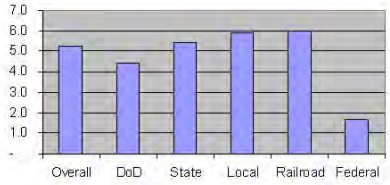
Slide 40

ALMR - User Uncertainty about Pricing

- **Especially for local users, uncertainty about pricing will inhibit them from even considering ALMR**
  - We are "desperately looking for cost information" on ALMR
  - "We need to know how much it will cost us to get on the ALMR system – for the maintenance and operations…if it is much more than $10 per month per subscriber, it will be very difficult for us".
  - "Cost is the biggest concern with coming on the system"
- **Moreover, purchasing subscriber units is not an issue, due to the availability of Homeland Security grants**
  - Of all the local organizations that secured ALMR-compatible radios, 100% were funded by grants
  - In many other states with earlier implementations such as Portland (1992-93) and King County (1992-93), each organization had to purchase radios with their own budgets
- **Thus, the main issue is uncertainty on subscriber unit O&M costs and network maintenance O&M costs**

Survey Results[1]

Importance of 'Predictable Monthly Costs'



Case Example

City with 90 subscriber units

"The main issue is budgetary. [Our town] is a small town in AK with budget problems. We've been fighting for 5 years to increase budget. ALMR participation is going to cost $1K per month, but this has to be almost free. At best, we could come up with a couple of hundred dollars a month, but not much more than that."

Market Strategy Group, LLC

40

[1] Source: MSG survey conducted in conjunction with TCO study

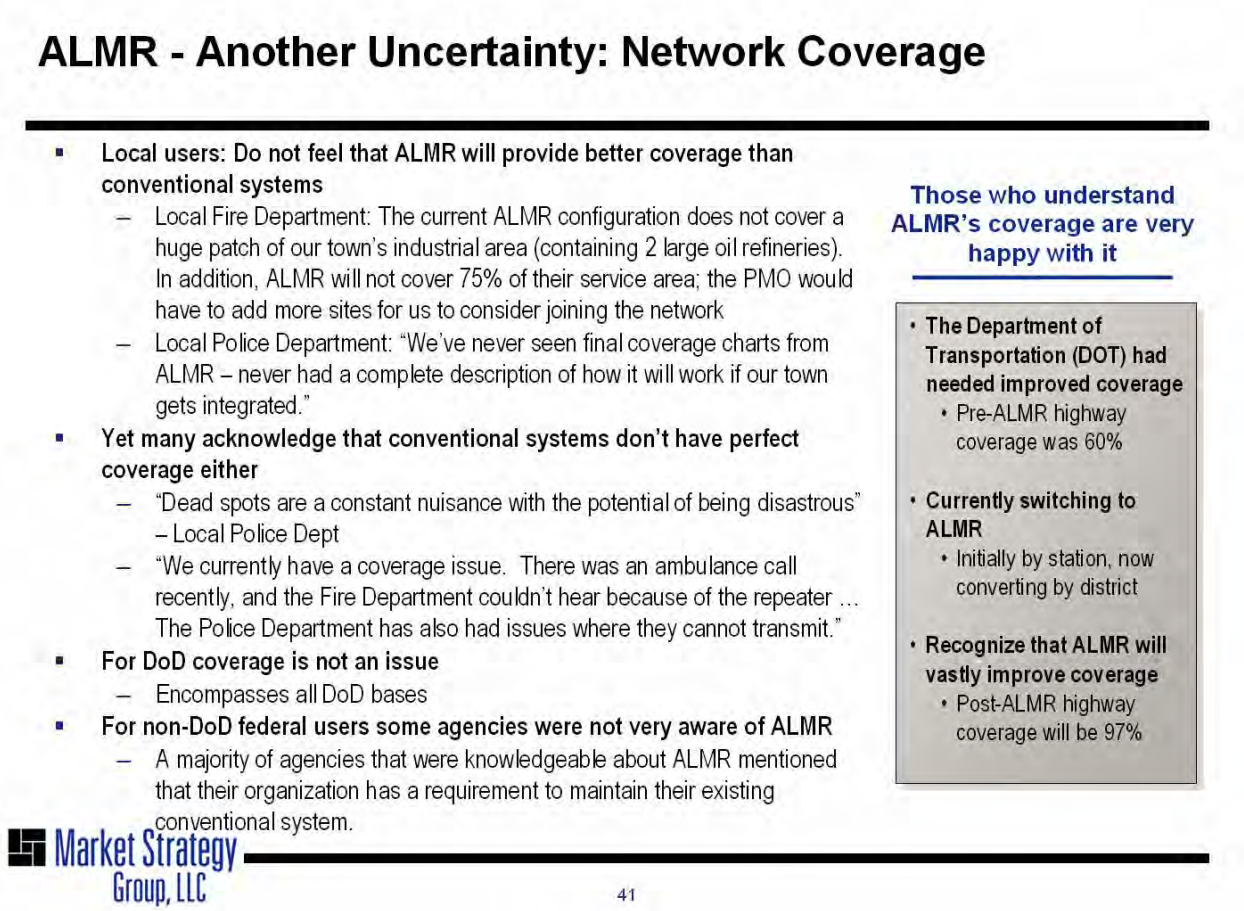
One of the primary areas of concern regarding ALMR is pricing: "How much is it going to cost my agency to use ALMR?" Realizing this is a huge issue for potential users, the DOD as a lead chair member of the Executive Council has commissioned a TCO study and cost share plan analysis to address this concern and provide a concrete analysis regarding the actual future cost for joining ALMR.

A predictable monthly cost is very important to local users, rating it an average of 6 on a 7 point scale. Having predictable costs is not that important to non-DoD Federal agencies.

From an educational perspective, organizations should be informed regarding the availability of government grants to cover the costs of new ALMR-compliant subscriber units. Though these grants will most likely not cover the actual ALMR access fee, they could be used to train users on the new equipment. Conducting awareness and perhaps developing a training class on how to apply for these grants should be developed.

Another important factor regarding costs is that for some organizations the monthly costs may be higher. However, these organizations will be receiving enhanced feature functionality for that higher price. Therefore, the outreach should focus on benefits received, not lower costs.

Slide 41



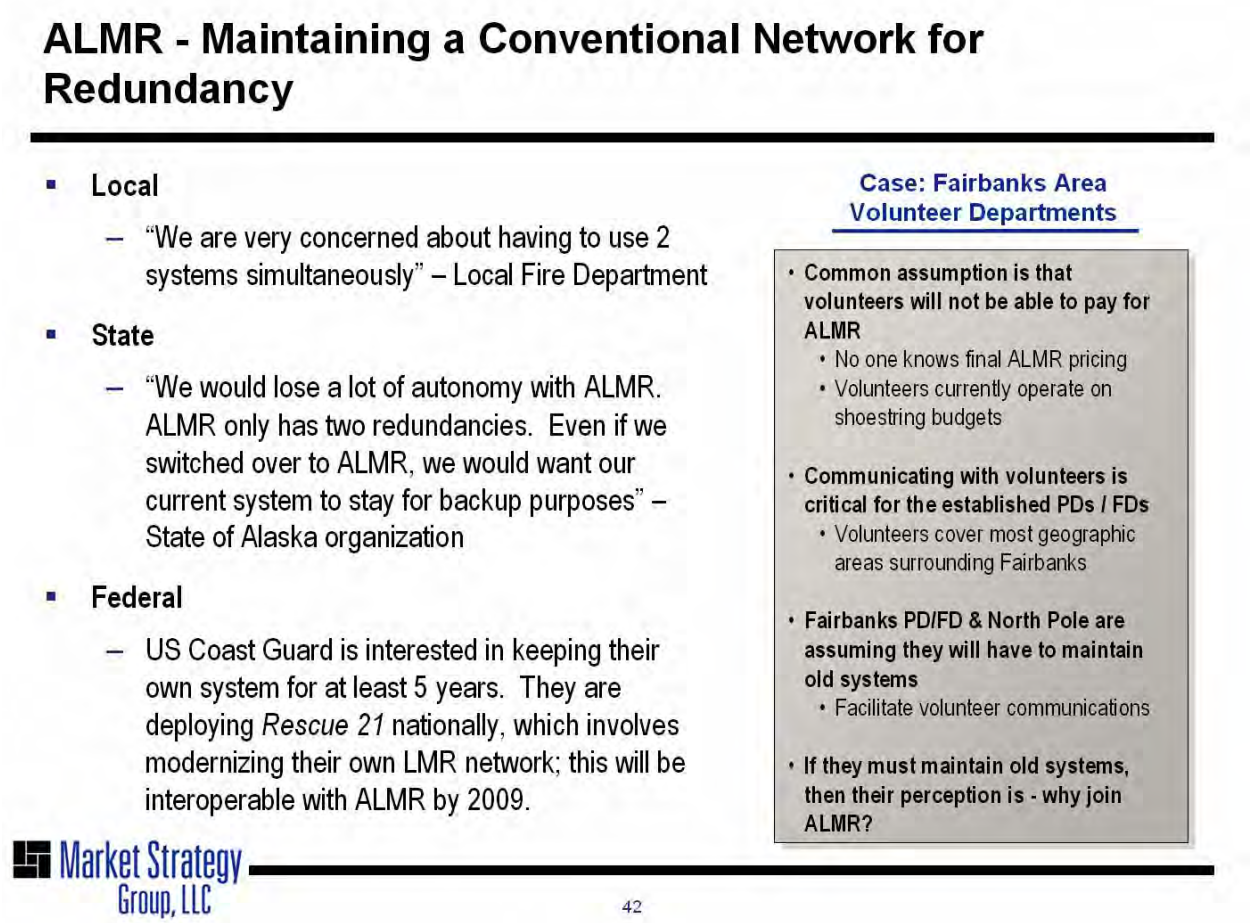
It appears that the primary driver creating uncertainty regarding network coverage is the PMO's inability to confront rumors. A successful approach to address coverage issues to is to perform coverage testing, especially with local users. In the benchmarked networks, spending 1-2 days driving around a local user's coverage area has proved to be a successful tactic for addressing coverage concerns.

Another important coverage-related message that is having difficulty rising above the clutter is the fact that highway coverage within the state will increase by over 50%, to an estimated 97% of the entire state highway system.

Because users are uncertain about whether ALMR will enhance their coverage area, they are hesitating to commit to ALMR.

Deploying a targeted communications plan will be pivotal to addressing this issue.

Slide 42

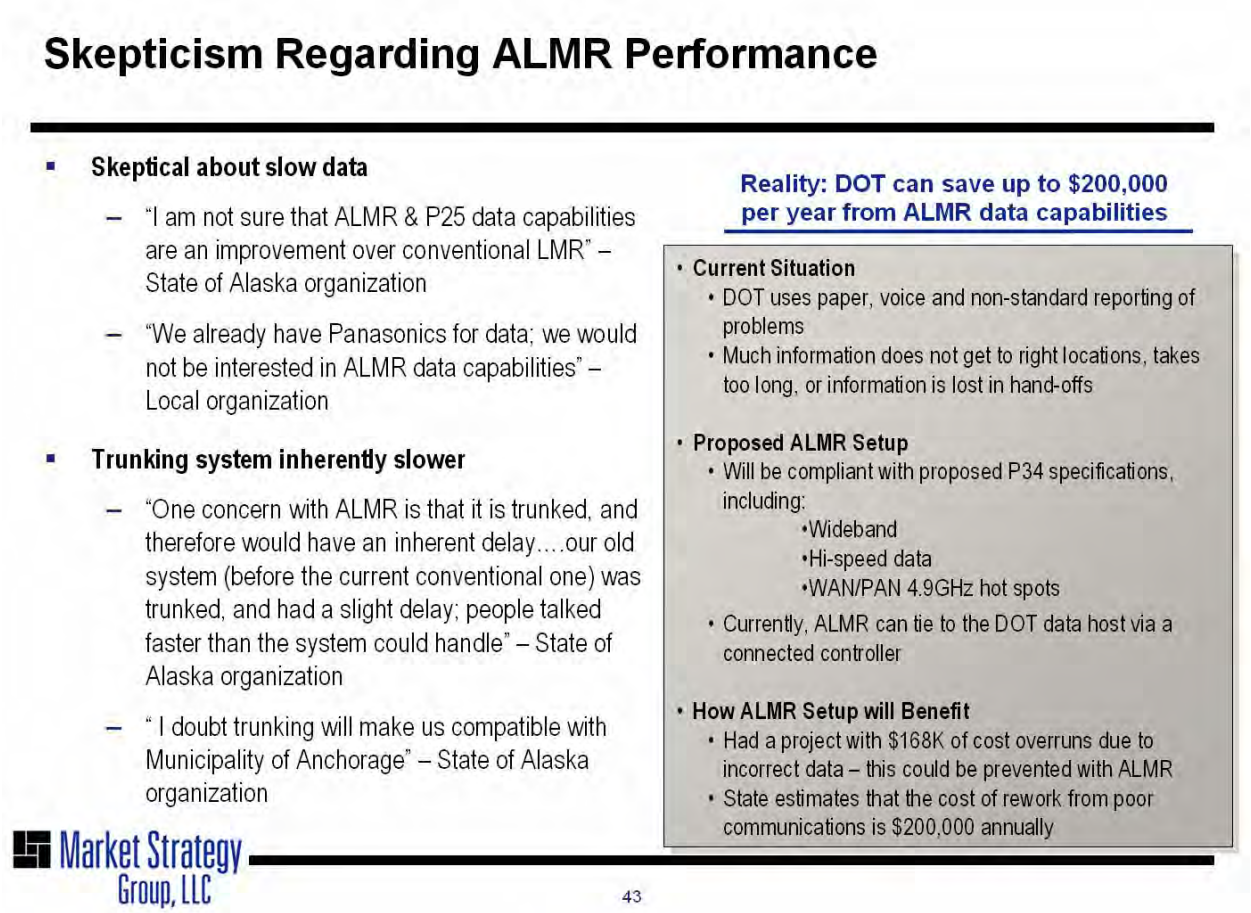


There is not enough frequency (spectrum) available to simultaneously operate ALMR and the current conventional systems. Even if enough spectrum were available in a localized area, maintaining two systems would be cost prohibitive. In spite of this many organizations interviewed think maintaining two systems is their best option. Education is needed to make clear to users that ALMR's built-in redundancy will make impractical any requirement to maintain a separate, conventional network in addition to the ALMR system. In fact, the ALMR system can provide at its lowest capability features equivalent or surpassing most agency's existing conventional capability.

From an independence perspective, the SOA agencies would not lose any autonomy by joining ALMR. As a key user, and one of the most important members in the user group, the SOA would certainly maintain a high level of operational ownership in ALMR.

Another key point regarding redundancy is that during the Winter Talon operation the FBI retained their own network as back-up for 4 days, and then stopped. They believed that ALMR provided sufficient redundancy that negated the need for them to continue using their own system. The evaluation that enabled the FBI to switch off their conventional system should be used as a case study for communicating with users that are uncertain about their need to switch to ALMR.

Slide 43



As with issues mentioned in previous slides, the skepticism regarding ALMR performance can be easily tackled by a cohesive education/outreach plan. Clearly, the points captured on this slide are rumors that have not been successfully addressed.

An optimal approach to address these concerns is to use demo/loaner radios. This has been successfully employed in several benchmarks in converting non-believers into active advocates. Letting potential users utilize an ALMR-compliant radio for 15-30 days and then collecting detailed feedback is a very effective approach to addressing performance issues and eventually successfully recruiting them.

Currently, there are several areas where a user can utilize demo subscriber units. The PMO should focus on inviting potential users to these areas and allow them to "play" with the ALMR-compliant equipment.

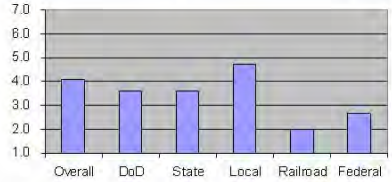
Slide 44

ALMR - Concern over Outsourcing Network Management

- **There is skepticism of vendors (outside organization)**
  - "Contractors can never understand 100% of needs" – State of Alaska organization
  - "I like to have someone on staff, even though I currently use a vendor. Its better for the system if you have staff that take care of it" – Local Fire Department
- **Many state users have also expressed skepticism of ETS' ability**
  - Not enough technicians, engineers, procurement staff
  - No training coordinator
  - Have difficulty creating budgets due to poor tracking and understanding of the numbers
  - Invoices frequently arrive 2-3 months late
  - No detailed billing exists, and surprise billings occur (4-6 months late)
  - ETS is unaware of the true costs of services and equipment
- **Job security is a definite concern for many organizations with outsourcing network management**

Survey Results[1]

Importance of 'Expert Network Manager'



Case Example: Municipality

" I don't think a contract organization can really understand public safety issues. Even though Motorola is selling services, they don't have the expertise. Our shop is tightly run; most employees have 10-20+ years of experience, and they know what they're doing. In contrast, even the best local shops have no one with experience working for them. They are trying to tell Kenai and Mat-Su to hire their own people. However, we feel strongly that you cannot rely on a vendor like that."

Market Strategy Group, LLC

44

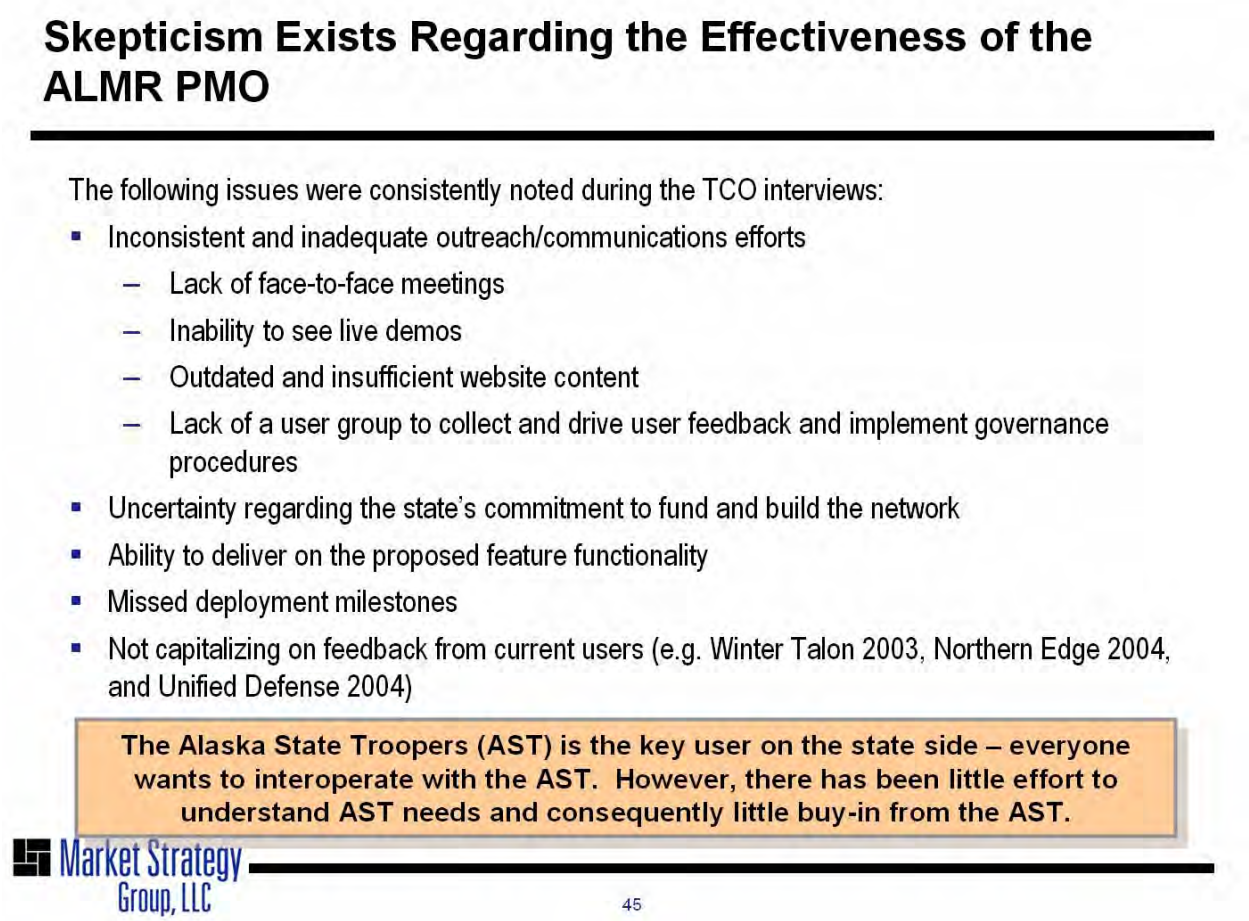
[1] Source: MSG survey conducted in conjunction with TCO study

The survey results indicate that having an expert network manager is viewed as the least valued attribute of ALMR. This is due to several reasons: poor experience with a previous external vendor, lack of trusting a state agency such as ETS to be funded adequately enough to perform a reliable, competent job, or a concern over losing headcount.

When the PMO is developing targeted messages, it appears that this is one that will not resonate with the intended audience. There appears to be too much negative history with external network "experts."

An approach to overcoming skepticism about the quality of network management would be to demonstrate that sufficient funding exists for whomever is selected as the network manger. In addition, the details of the metrics that will be used and reported on regular basis should be created by the user community and shared with all users. These metrics should directly address the quality of the network (uptime, dropped calls etc.). South Carolina is a best-in-class example of identifying, collecting, and utilizing metrics. The bottom line is that the user community must own this process and ensure that the system meets and continues to meet their needs.

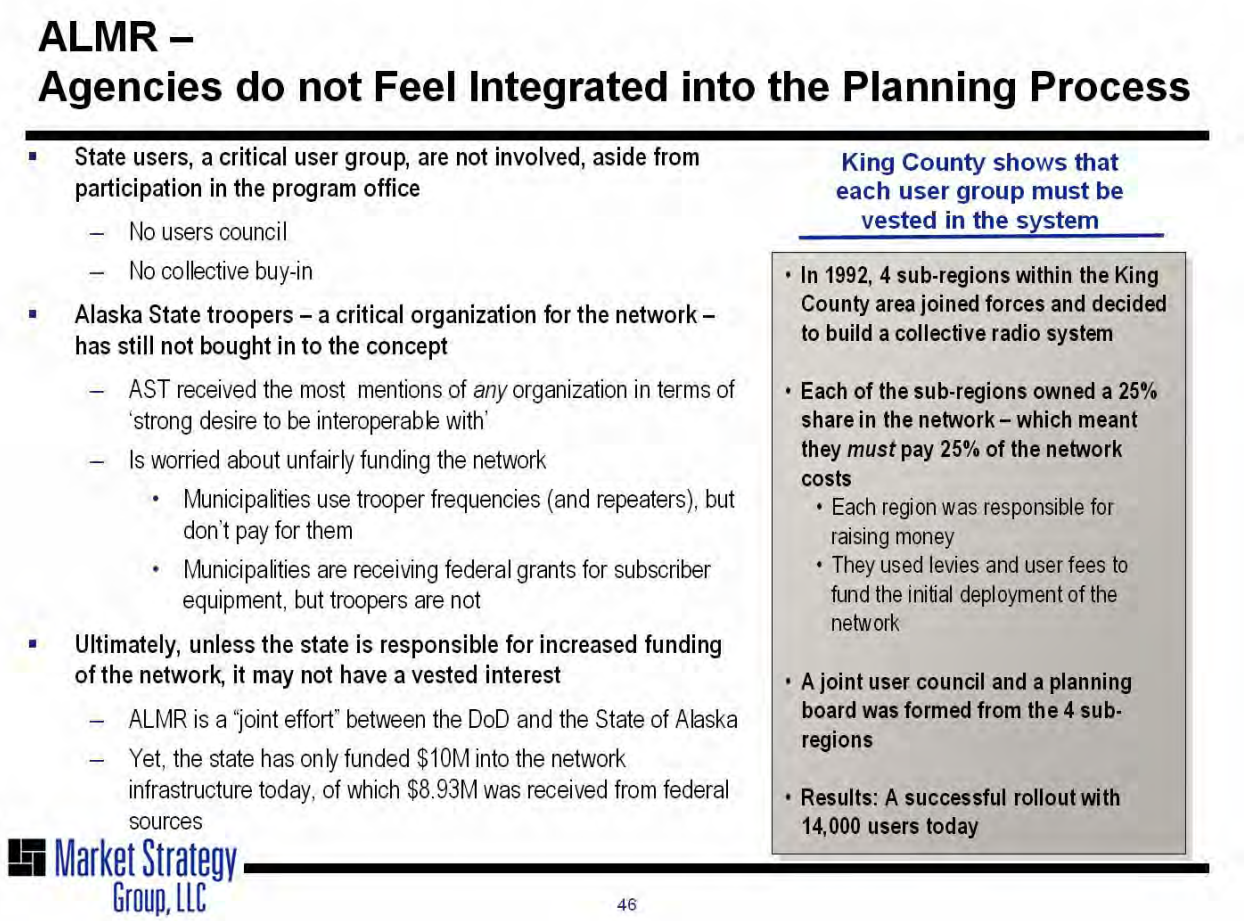
Slide 45



This slide reflects actual feedback secured through the interviewing process. Potential users are very concerned regarding the SOA's lack of financial and human capital commitment. They feel that because the SOA "has not put skin in the game in the past, why should we expect them to behave differently in the future?" In addition, they get confused regarding the mixed messages they received from different ALMR personnel. For example, personnel from the DMVA, who are not directly involved in the PMO, have made inaccurate comments regarding ALMR's functionality and deployment schedule. These comments have not been fully addressed by the PMO. One reason the PMO is slow to address these issues is that they may not even be aware they exist.

Another key concern is that the PMO has not been responsive to their informational requests. During the interviews, these organizations frequently commented, "now the PMO wants to talk to me, I have been unable to talk to them for months." This lack of responsiveness by the PMO hinders recruiting efforts and does not help in building trust with the potential constituents.

Slide 46

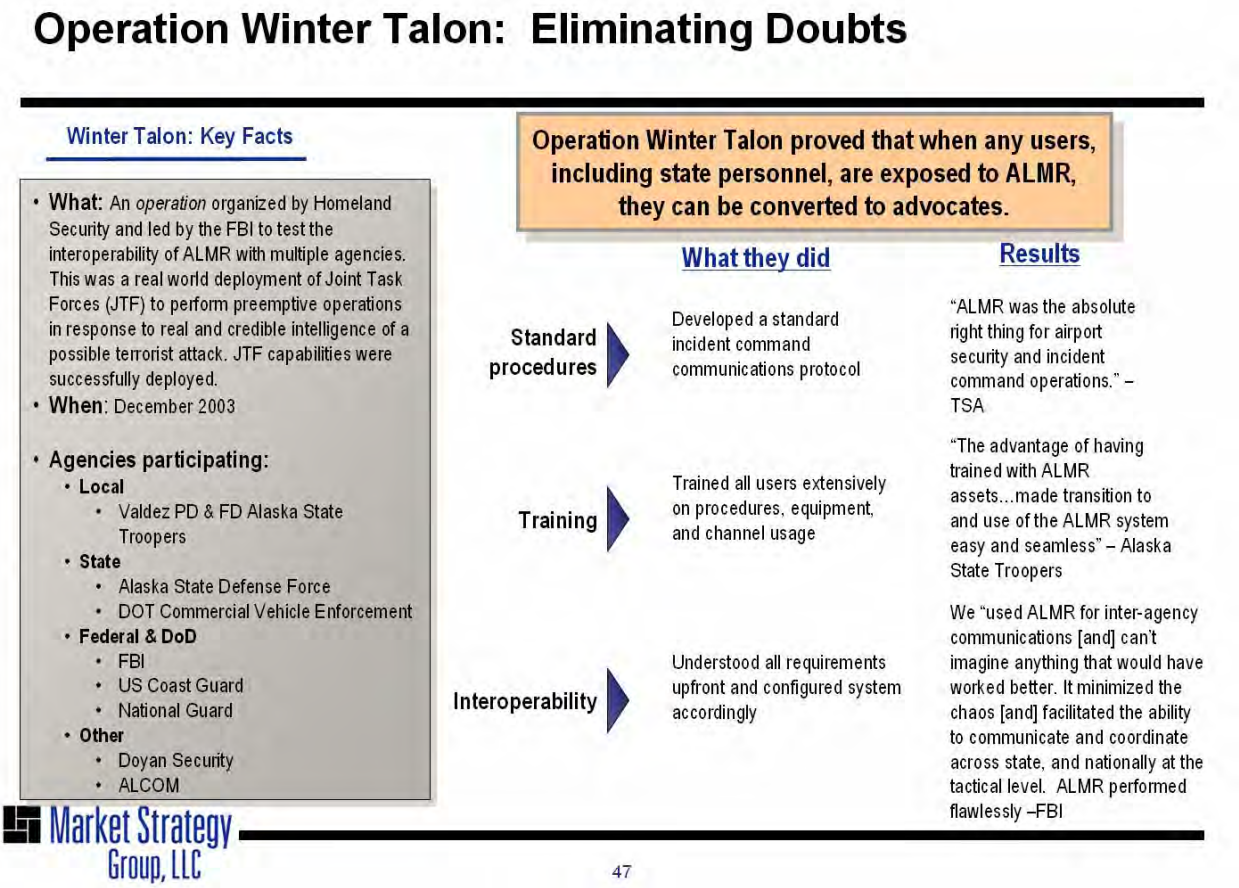


An independent Users' Group/Council with an active role in providing network requirements and policy guidance, and giving feedback to ALMR management would go a long way toward addressing many user concerns. The probability of failure is high if a group is not immediately formed. Potential users require a voice in the network planning and operation. Every successful LMR area-wide network had a successful users group established early in the planning process. To address this issue, the PMO recently has hired a facilitator to begin forming a users group.

A user group consists of representatives from all the network's users. The number of users the organization has will dictate the number of members they can have in the group. At a minimum, every group has at least one member. The users elect a board of directors/leadership council who develop by-laws, procedures, and other governance processes. The entire user group typically approves these items. In addition the board forms multiple committees to handle specialized issues such as: technical, outreach, funding, planning, public policy. Each of these committees has a chair and could possibly create sub-committees, if appropriate. Recommendations are made to the user group via the committees, the ALMR Executive Council, vendors, or the operational office (most likely a state agency). Issues are voted on in a democratic manner. The user group would act as the governing body for ALMR. This must be structured as, and remain an independent group.

Organizations that are interested in ALMR, but have not yet signed a letter of intent to join, could still be involved in user group activities in some capacity. However, they would not be allowed to vote.

Slide 47



Operation Winter Talon was a major success for ALMR. Agencies from all user segments successfully participated in this operation. (Motorola even produced a DVD and brochure which highlighted the results, and is available through the PMO). However, this success was not communicated to potential ALMR users and the feedback from this exercise has not been acted on.

An After Action Review (AAR) was compiled on Winter Talon. It contained several areas for improvement for ALMR. However, these specific pieces of feedback were not acted on, and no feedback loops with the users were established. In addition, the personnel from Valdez, who were actively involved in this operation, were not asked to become advocates for ALMR, visiting other sites, going on road shows, presenting at conferences, etc.

It appears that an excellent opportunity which clearly demonstrated the value of ALMR was not capitalized on from an outreach perspective.

Slide 48

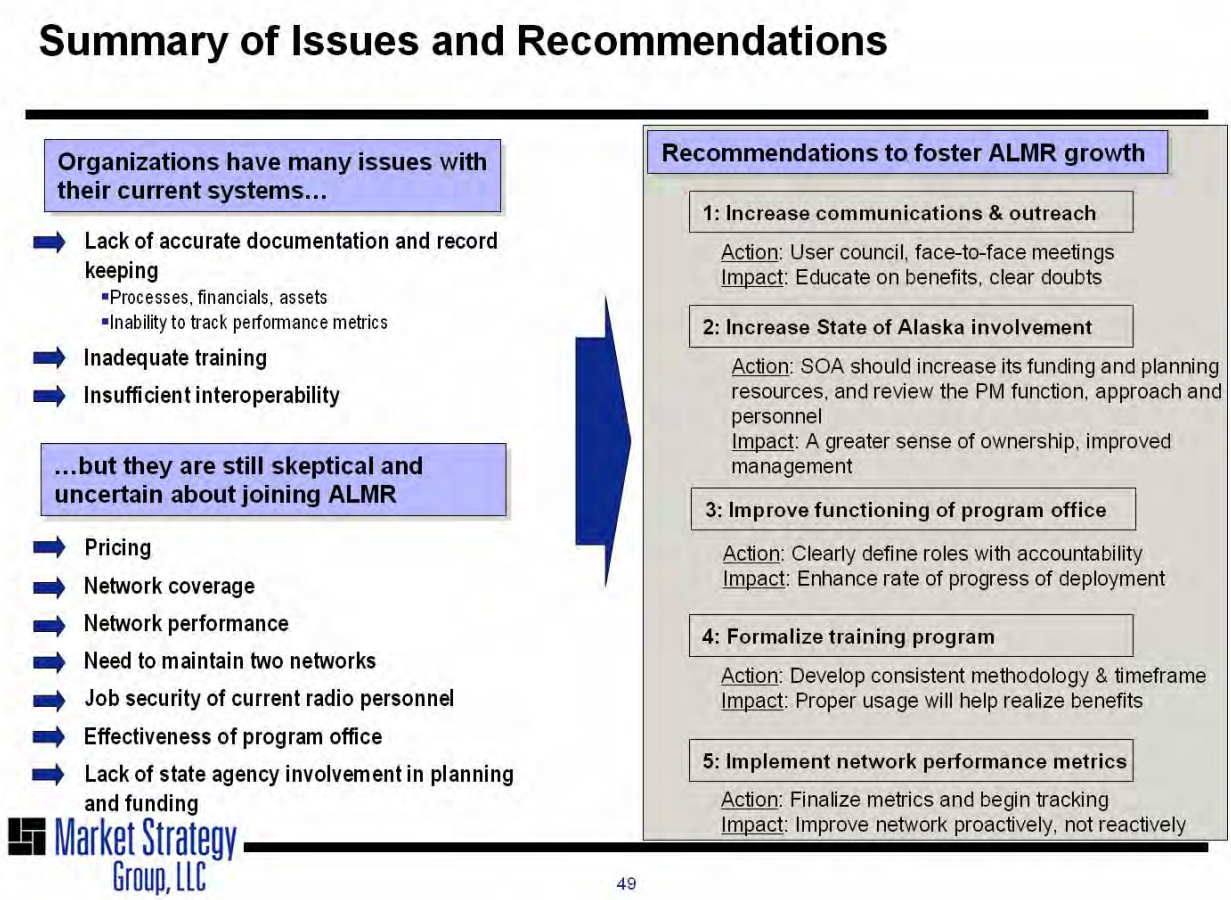
Table of Contents

Market Strategy Group, LLC

48

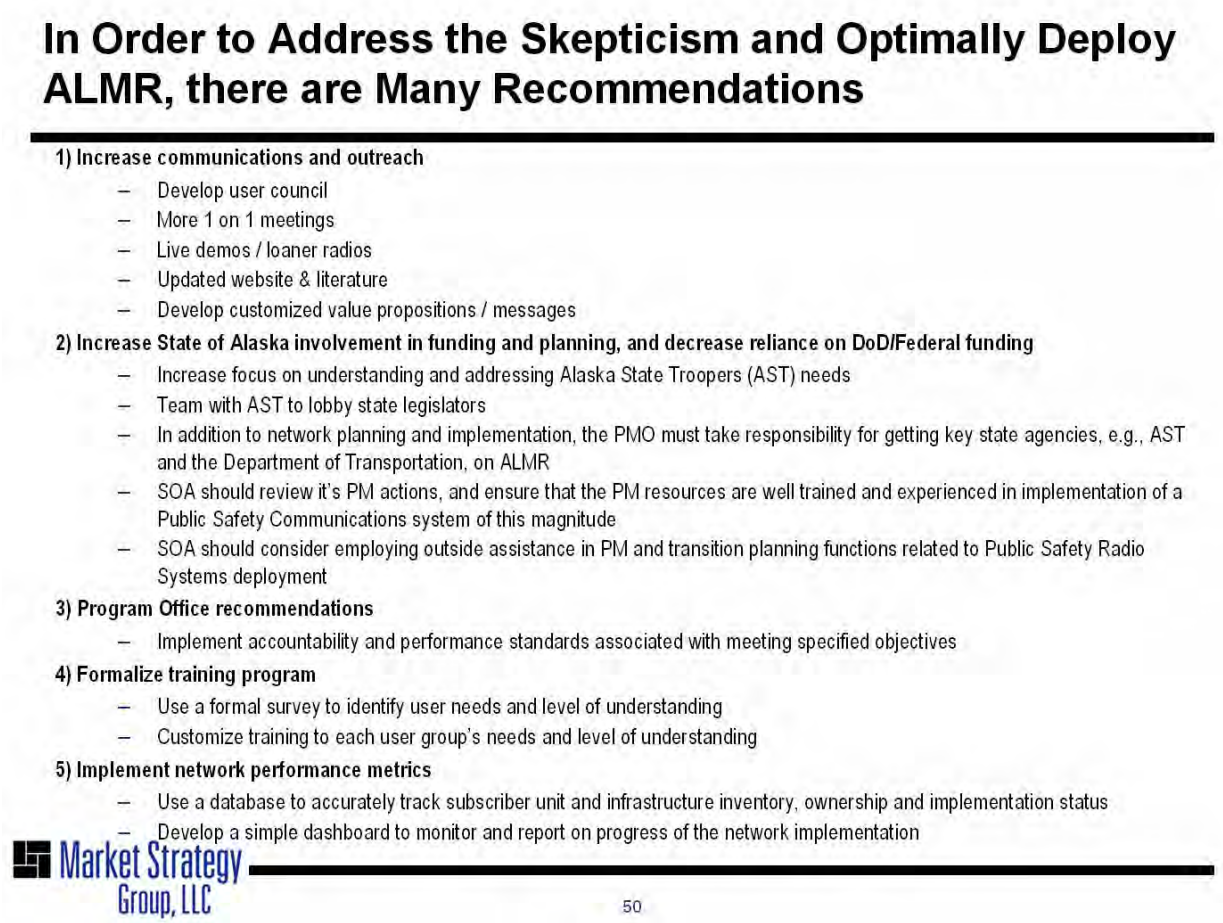
In this next section the focus switches from a discussion of the issues/concerns involving ALMR, to providing detailed recommendations on how to optimally address the problems.

Slide 49



To reiterate, this slide once again lays out the issues users are currently having with their conventional network, skepticism they have with ALMR, and recommendations for addressing these issues. This section will detail the recommendations.

Slide 50



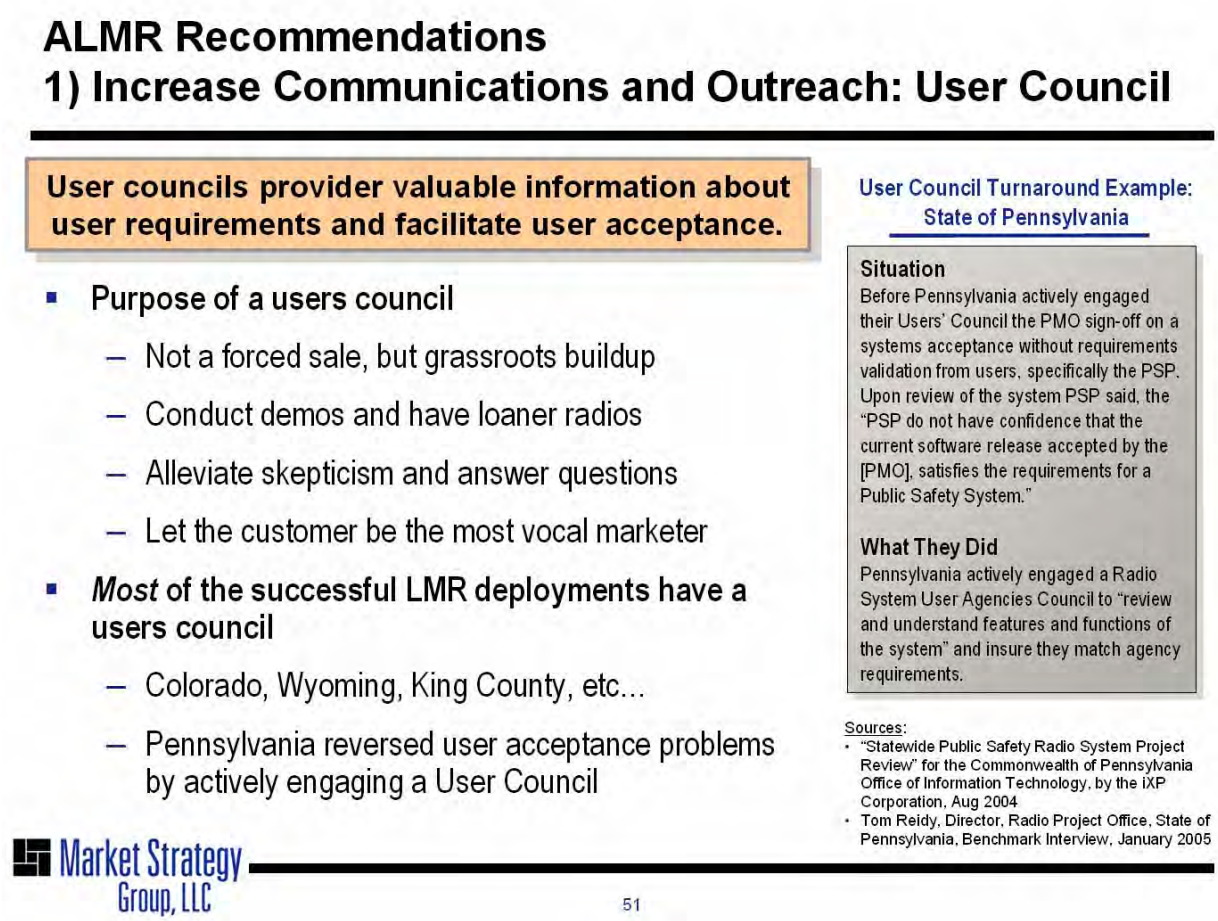
This slide provides the high-level summary of the recommendations that will follow in the next 10 slides. All of these areas are equally crucial in helping ALMR meet their stated objectives. Some of these specific recommendations are currently being pursued such as lobbying the state legislature for additional funding and developing an independent user's group/council.

Several of these recommendations will address issues which confront the current conventional users, such as their lack of an adequate training program as well as their inability to accurately track network-related metrics.

Another set of recommendations will help improve the operations of the PMO. This will be crucial for the ongoing success of ALMR. If the PMO can enhance its internal operations, and present a unified front to its potential constituents, the recruiting success rate should be enhanced.

If these recommendations are not addressed, the ALMR program could be in serious jeopardy. This could result in partners pulling out and funding being lost.

Slide 51

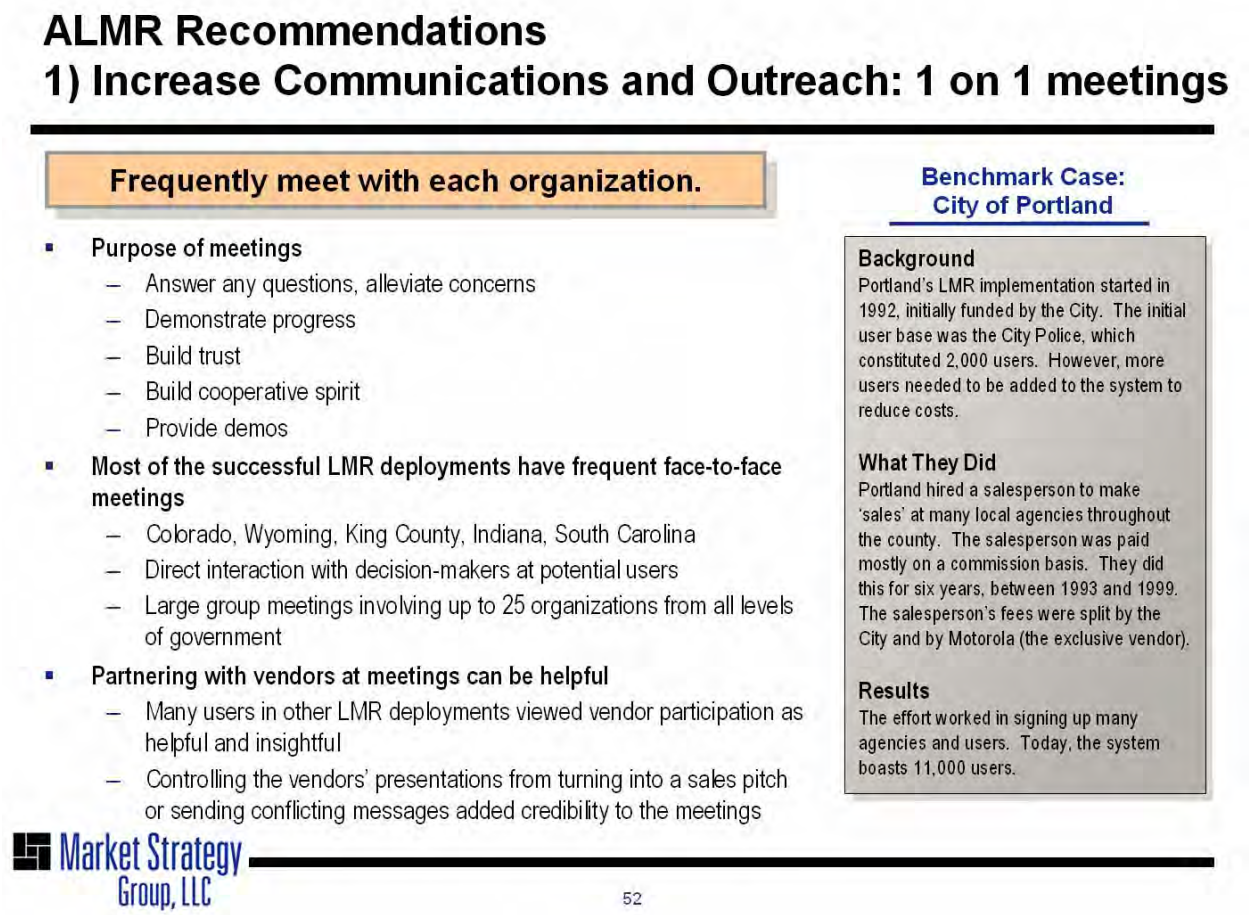


Though its has been mentioned several times in this report, implementing a well-oiled, functioning, independent user's group is integral to the success of ALMR. As a benchmark example, after a highly publicized, troubled network launch the State of Pennsylvania turned around their network implementation by taking full advantage of their users' group. The State of Pennsylvania launched their network before actively engaging and getting requirements validation from users, and lost the trust of many users. The new network manager has made active and frequent communication and buy-in from the users' group an essential component of developing and managing their LMR network.

More detail on the specific structure of user's groups/councils is presented in the benchmarking section (slides 71-74).

Many benchmark participants mentioned that their user's council continues to play an important, proactive role in shaping future network changes, design outreach efforts, and develop funding strategies.

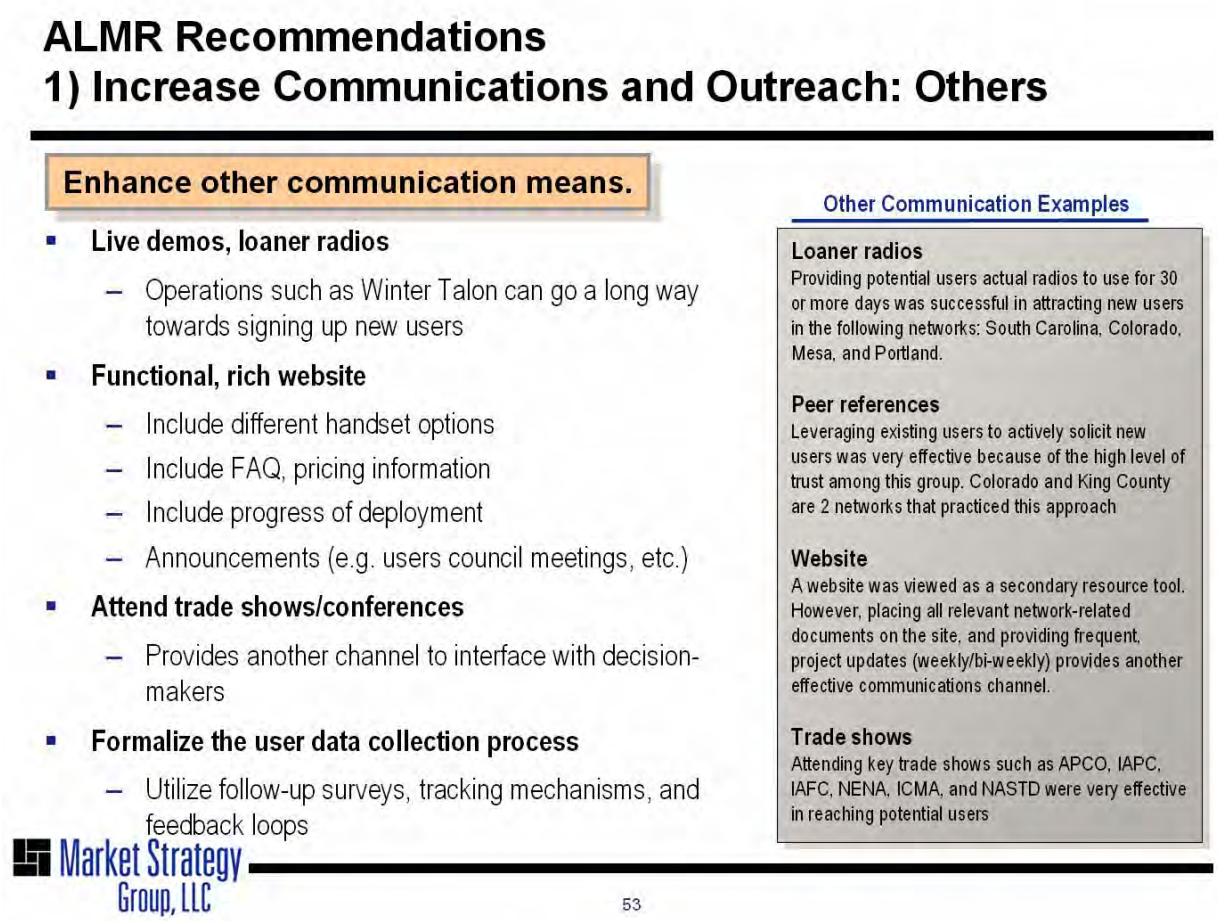
Slide 52



"Pressing the flesh" is crucial to building trust with potential users who want to be able to associate a name and face with a program. In addition to the Portland benchmark detailed in the slide, Wyoming provided another approach which was very successful. The LMR program manager visited each of the 20+ counties in the state to introduce their statewide LMR network, *WyoLink*. At each meeting a representative from Motorola and EFJohnson attended. These representatives were not allowed to "sell." Their primary purpose was to answer questions. They were not allowed to make any presentations or leave any sales materials. The program manager wanted to ensure that every session was educational, not sales-related. Based on the feedback from the session participants, having the vendors present in a information-only mode was well received. The vendors were able to address many of their technical concerns, and the potential users did not feel pressured to purchase anything.

Another suggestion is to utilize the Internet to conduct *remote* meetings. Due to unique terrain in Alaska, conducting interactive, remote meetings may be optimal from a logistical and financial perspective.

Slide 53



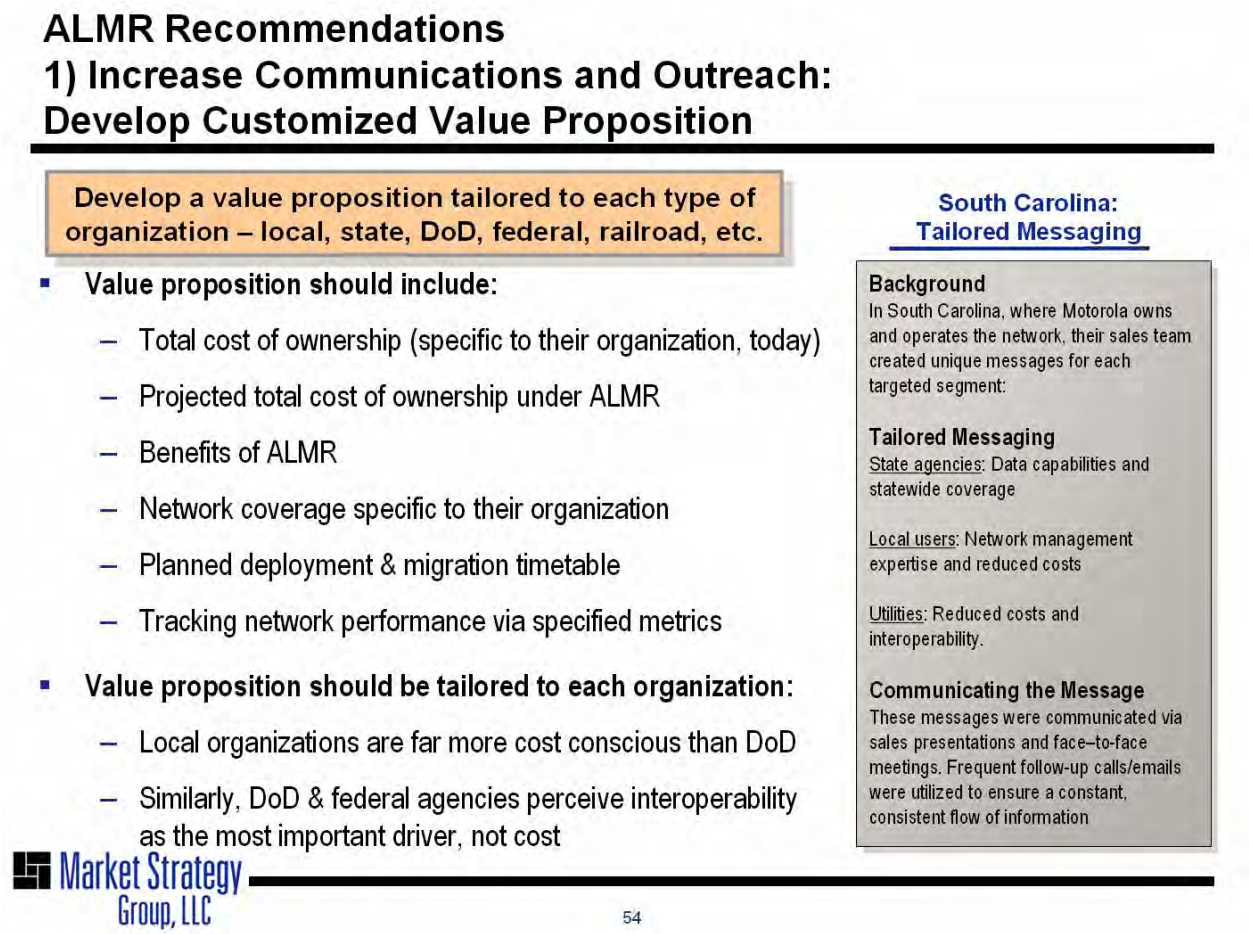
Several benchmarked organizations commented that once a potential user had the opportunity to use the radios, their conversion rate was much higher. Currently, the ALMR PMO can bring potential users to some of the DoD installations, Valdez, or even Fairbanks to have them “test drive” ALMR. There appears to be multiple test-beds that will allow this type of loaner/demo opportunity.

Another focus, though secondary, is updating the ALMR website. People prefer direct, in-person or over-the-phone contact. However, when they are unable to secure this, they will visit the website. The ALMR website should be updated with greater frequency and be made more interactive so users/potential users can create a networked, on-line community to share ideas, solve problems, act as advocates, etc.

Regarding trade shows, the PMO is doing an excellent job of publicizing ALMR on a national basis. Feedback from the benchmarked participants confirmed this. However, by focusing on large-scale national shows, local and regional shows may have been missed. The PMO should reinvigorate their efforts to locate and attend local shows because that is where the users and decision-makers can be found. Due to budget constraints, many local users cannot send personnel to the *lower 48* to attend the national shows and gain exposure to ALMR from that perspective.

Implementing feedback loops with users is crucial. It appears that this was not optimally completed regarding the feedback received from the Winter Talon operation. A website could assist in ensuring tracking and monitoring of user feedback.

Slide 54

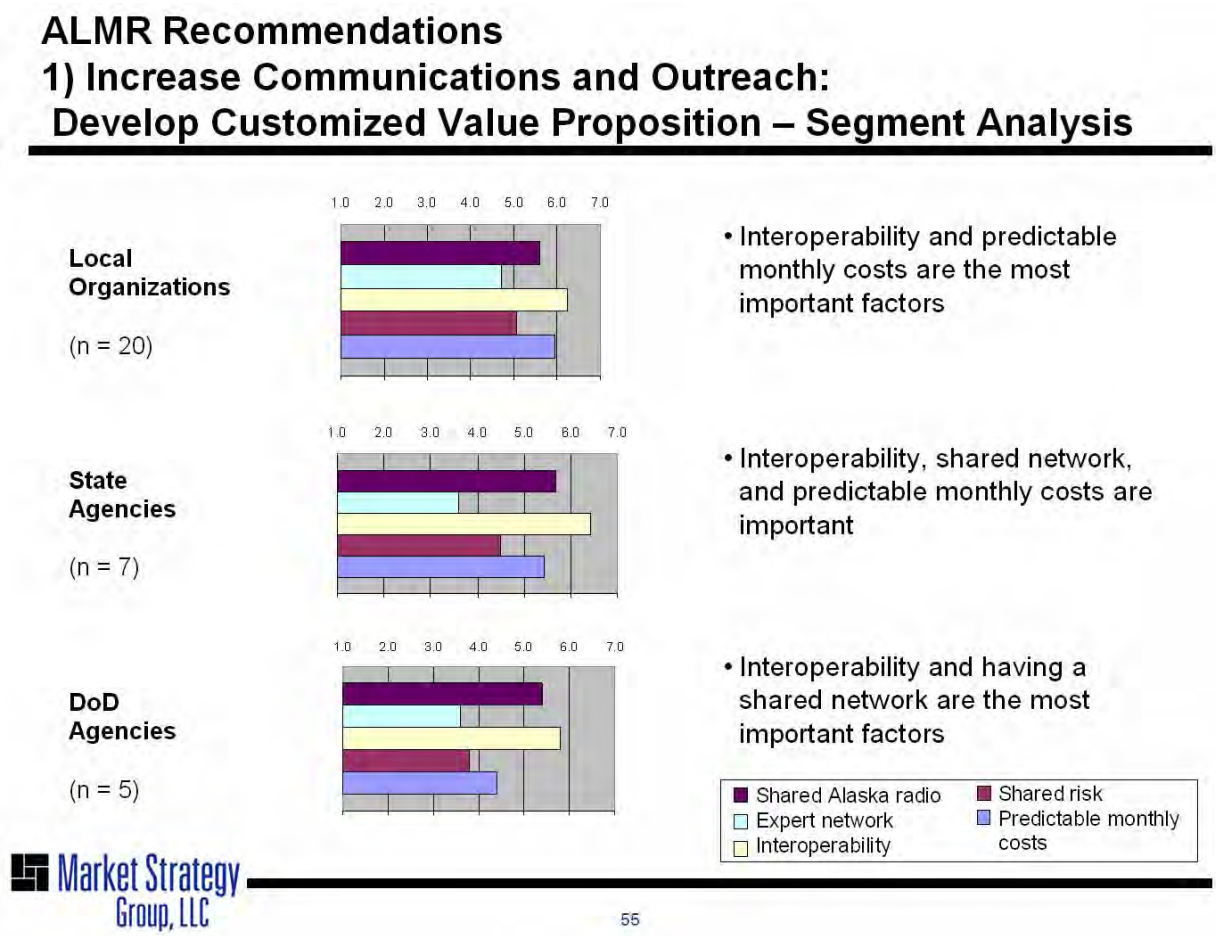


The ALMR PMO needs to clearly understand each user's segment primary and secondary value propositions. A best-in-class benchmark example is the approach utilized by Motorola in South Carolina. They used dedicated personnel who had expertise in a specific segment to target those users. The communication materials were customized based on the segment's key drivers. The messages and personnel were kept consistent during the recruiting processes. Another successful approach is to utilize personnel who have specific horizontal or vertical knowledge. For example, if a PMO member used to work in Fairbanks, leverage them to help communicate the value proposition to the Fairbanks users. Also, if the PMO has a former firefighter on their staff, that person should be utilized to target all potential fire departments.

Aggressive outreach should be targeted at the non-DoD federal segment. Based on the interviews, many agencies were not aware of ALMR. The ALMR Federal Non-DoD Executive Council member could be a potential point person to identify and actively recruit key decision-makers and opinion leaders in this segment. In addition, this EC member could help develop customized value propositions based on his institutional knowledge of the agencies.

It is important to have personnel who develop the customized value propositions to have expertise in marketing, communications, and outreach. Deploying DoD personnel or engineers/technicians to assist in writing value propositions may be not be optimal.

Slide 55



This quantitative analysis has been previously shared in this report. However it is important to show it again because the discussion is currently centered around creating customized value propositions. With the exception of the railroad, interoperability is either the #1 or #2 most important value proposition. Below is a recap of the data in this slide and the next:

Segment	#1 Value Proposition	#2 Value Proposition
Local	Interoperability	Predictable monthly cost
State	Interoperability	Predictable monthly cost
DoD	Interoperability	Shared network
Railraod[1]	Shared risk	Multiple
Non-DoD Federal	Shared network	Interoperability

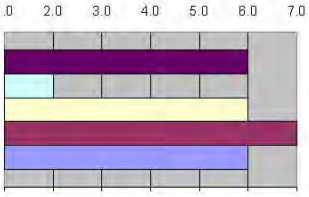
1. Only one person was interviewed at the railroad.

Slide 56

ALMR Recommendations
1) Increase Communications and Outreach:
Develop Customized Value Proposition – Segment Analysis (cont.)

Railroad

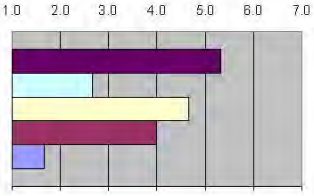
(n = 1)



- Shared risk is the most important factor
- Interoperability, predictable monthly costs, and being a part of a shared Alaska network are also important

Non-DoD Federal Agencies

(n = 3)



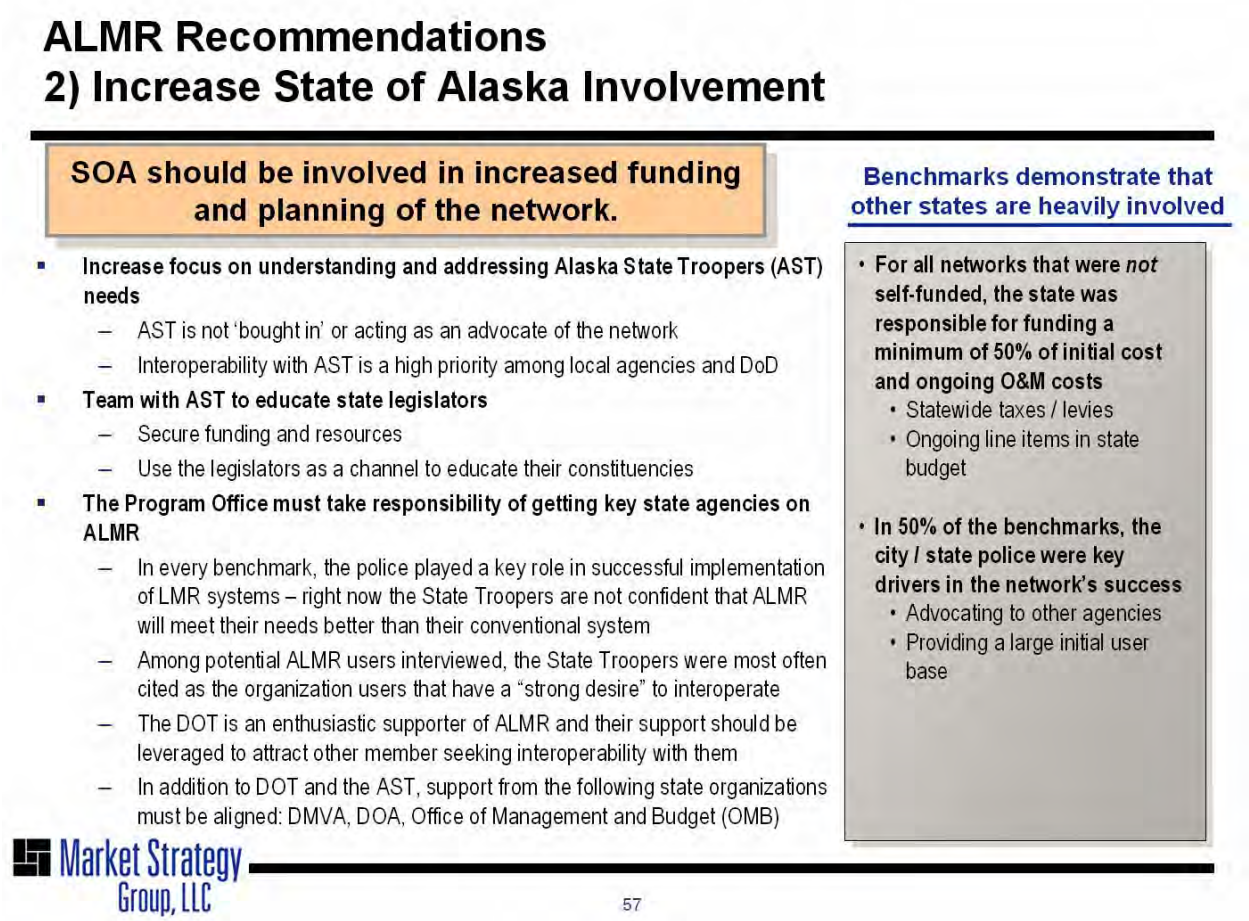
- Interoperability and having a shared network are the most important factors
- Costs are not a factor

Market Strategy Group, LLC

56

See comments on previous slide.

Slide 57

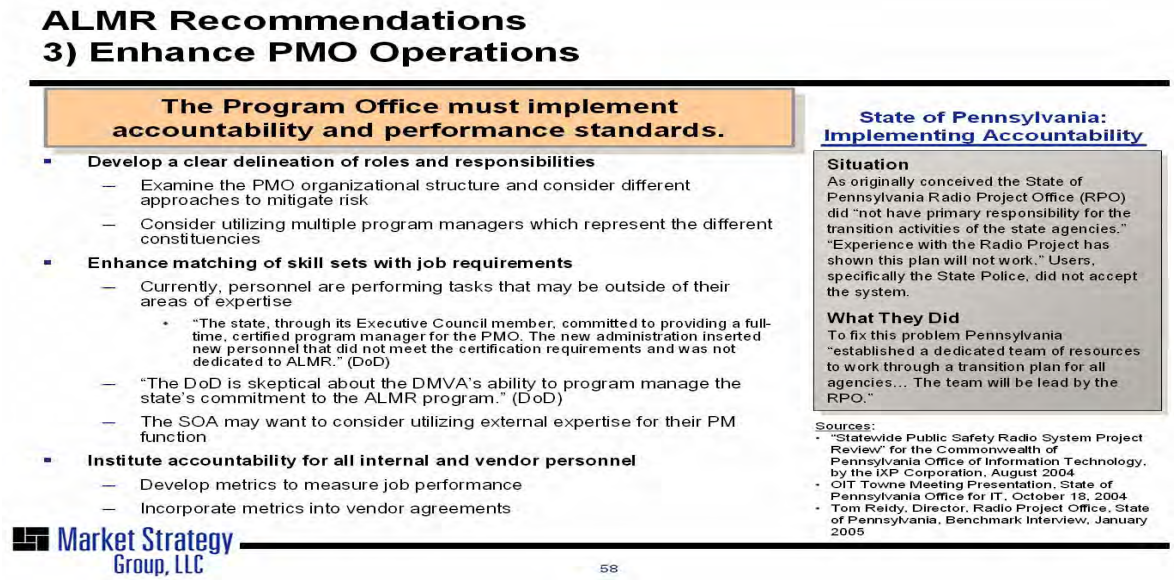


In most of the benchmarks, the city/state police force was a driving force in making the area-wide LMR network a reality. They have the most vested interest, technical expertise from a public safety communications needs standpoint, and helped secure funding. It is critical that the state troopers support ALMR not only in spirit, but in their resource commitment and communications. Having the full support of the troopers will help align other organizations behind ALMR. The AST must be supportive of ALMR at all levels: Executive, chiefs, and end-users. An integrated outreach/educational effort must target these multiple constituencies at the AST to ensure full, broad-spectrum support. AST is a key stakeholder and stands to benefit most from the implementation of ALMR; they need to step up ownership and advocacy of ALMR.

Another key state organization, the DOT, is very excited about ALMR. Their personnel should be leveraged from an outreach perspective to help communicate the ALMR value proposition to potential users.

Also, ensuring that the DOA, DMVA, and the OMB are aligned so they work together to secure state funding is absolutely crucial. Currently, the state has been overly reliant on federal funds. Going forward, this may not be an optimal strategy. If potential users, especially locals, see that the state is not providing funding and resources, they may question the overall viability of ALMR, and thereby not join. "If the state is not supporting it, why should I be behind it?"

Slide 58



There is confusion as to which agency is responsible for specific outputs within the PMO. For example, there is no clear delineation of duties between the DMVA, DOA, and DoD. Potential users have commented that depending on who they contact at the PMO, they may get a different response on issues such as timetable, feature functionality, and cost. In addition, users do not know who to contact regarding specific questions.

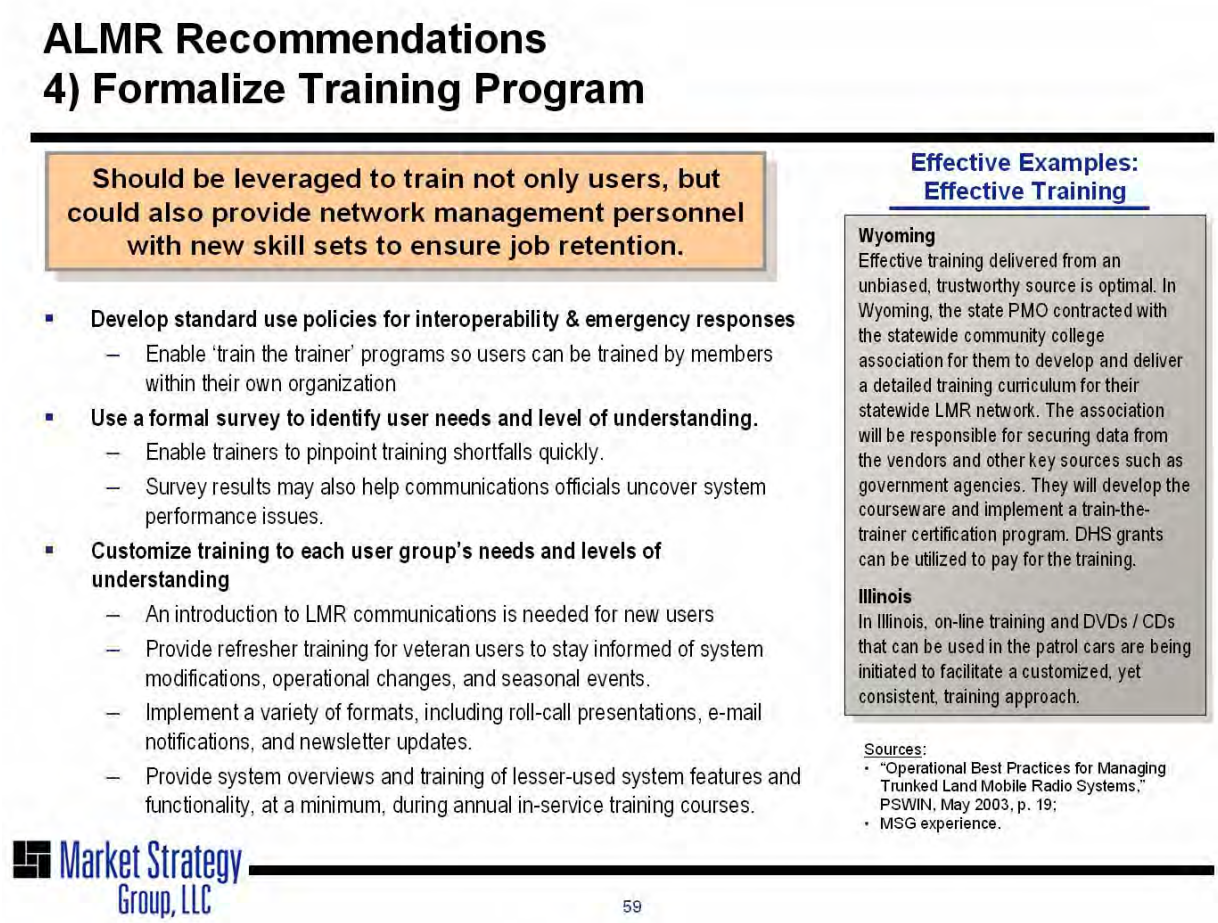
A potential solution is developing a consortium approach to program management. Each of the 4 major user segments: state, local, DoD, and non-DoD federal will have one program manager each who are all co-equals in the PMO. These PMs will be the point of contact for their respective agencies. Decisions will be in a democratic manner amongst the 4 PMs, with the ALMR Executive Council performing a *check and balance* function. By distributing the ownership amongst the 4 primary partners, decisions could be made in a manner that accounts for all the constituents equally. Any disagreements amongst the program managers should be addressed in private and if not reconcilable, bought to the Executive Council for resolution.

Another area for improvement is ensuring that the personnel are performing the tasks they were hired for. As an example, SOA, DoD and technical/engineering personnel associated with these agencies should not be developing marketing materials, it is not their area of expertise. A premium should be placed on hiring personnel who have the appropriate credentials. This helps create an atmosphere of trust.

Also developing metrics to measure performance must be instituted; personnel need to be accountable for their performance, or lack thereof. Because performance metrics were not in place, poor PMO performance by the State PM, severely affected the success, and significantly increased the risk to the DoD PM's actions. Metrics could include: results from satisfaction surveys from potential users, level of PMO responsiveness, percentage of funding grants approved, or research projects completed.

If changes are not made immediately, the ALMR deployment could be in serious jeopardy. Moving forward the PMO must carefully scrutinize each individual's backgrounds and experience to ensure that they are qualified to complete their assigned tasks. Currently, there is a lack of congruency amongst the individual's background and their assigned deliverables.

Slide 59

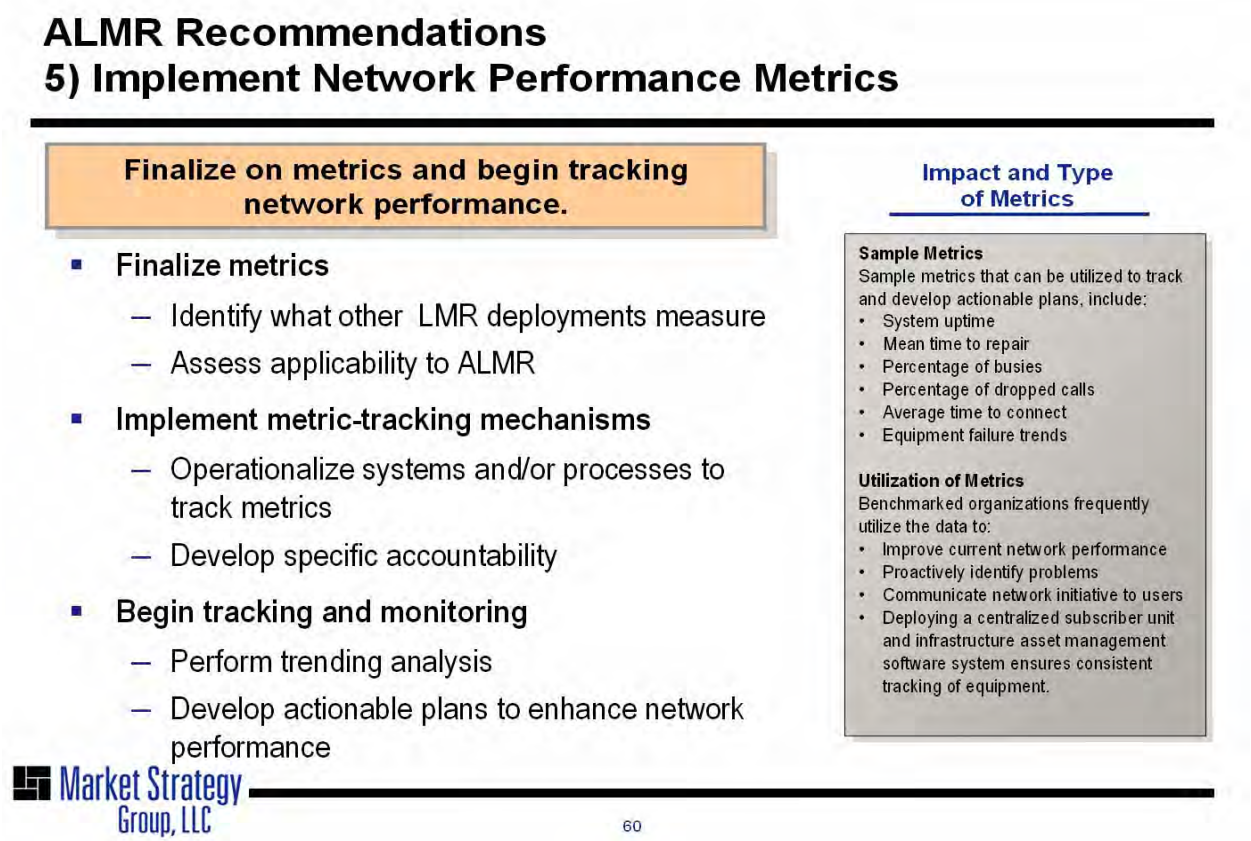


Successful training involves developing the appropriate content and using the optimal channels for delivery. Benchmark participants commented that training courses that are conducted by someone wearing the "same uniform" as the attendees is most effective (e.g., a current or former police officer should train current officers). Because these trainers have "walked in the shoes" of the attendees they have instant credibility and can discuss specifically demonstrate how ALMR can be deployed to enhance their job performance.

Also, as mentioned earlier, multiple channels of training should be offered due to travel constraints and learning style preferences. Illinois developed DVD/CDs which can be used by their police officers in their cars. This real-time access to information is very effective, because the officer no longer has to contact someone (and most likely wait) to secure the required information.

The PMO should consider implementing a train-the-trainer program. Leveraging an academic institution (e.g., University of Alaska, Anchorage or Fairbanks) to assist in developing the course materials and the train-the-trainer program could be beneficial, as they are experts in education.

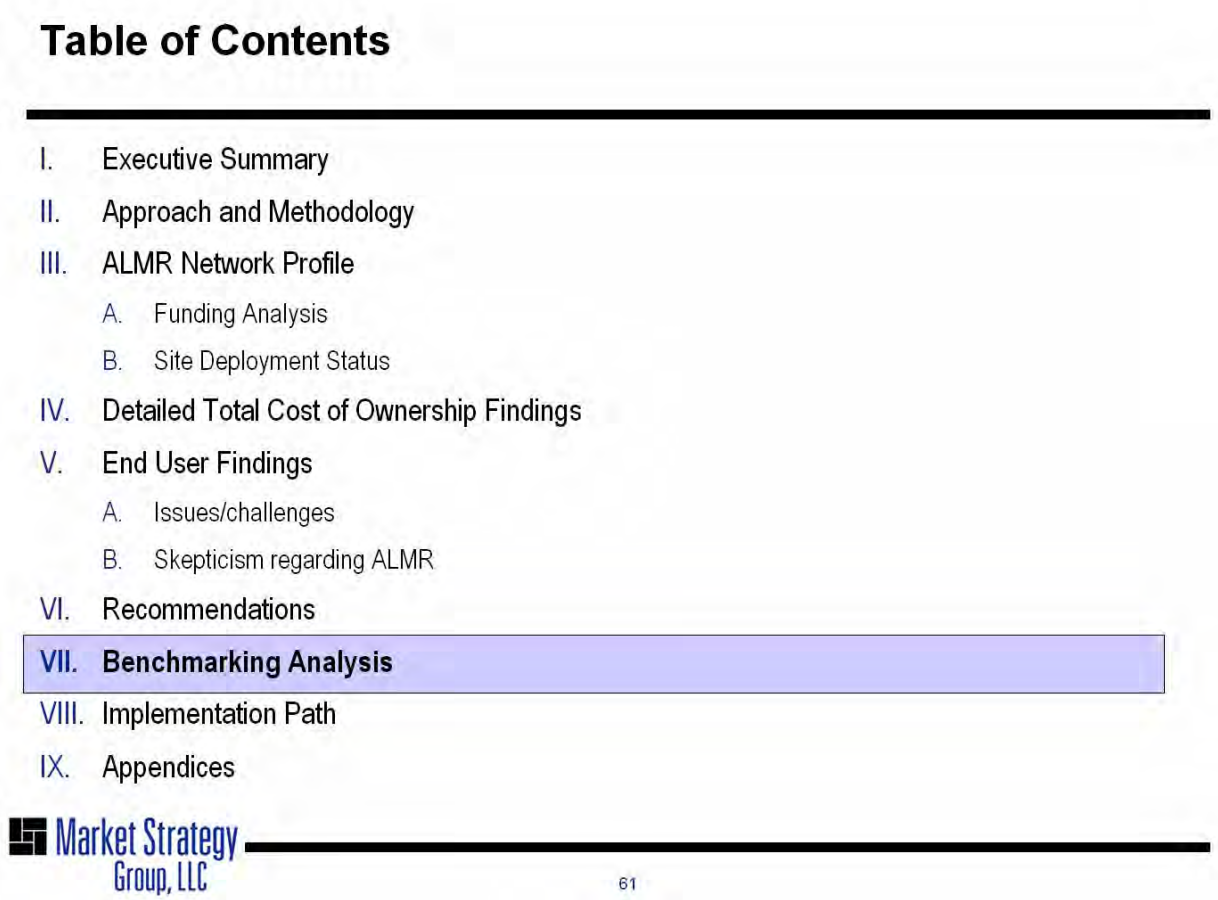
Slide 60



Collecting metrics can be easily done by ALMR. However collection is only half the battle. It is critical to use these metrics to improve network performance. The user group or operational office should take responsibility to report and act on the metrics collected. For example, if network uptime is only 95%, and the stated objective is 99.9%, the metrics can be utilized to identify the problem, but then ALMR users need to develop a plan to increase the uptime to the stated objective. During this process, communication with the users about their expectations and requirements is very critical. Leveraging the website is a cost effective manner to share information with affected users.

The tracking and utilization of metrics must be institutionalized within the user community to be effective. For a large majority of ALMR users, metric collection will be a new experience. It will be important to educate users on the types of metrics that can be collected and their powerful informational content. Wherever possible, automated collection of metrics should be used.

Slide 61



The next section focuses on a benchmarking study that was conducted to identify best-in-class practices of area-wide LMR networks.

Slide 62

Benchmarking Approach

Purpose

- Collected network profile, pricing, and funding data
- Identify key success drivers
- Share lessons learned

Methodology

- Identified 15 organizations with state-wide, region-wide, or city-wide LMR networks that are currently, or in the process, of being deployed
- Developed a 5-page telephone survey instrument to collect the data
- Located a subject matter expert at each organization
  - Emailed survey instrument to the targeted respondent
- Completed interviews with 13 organizations
  - In addition, benchmark data was also collected for ALMR

Market Strategy Group, LLC

62

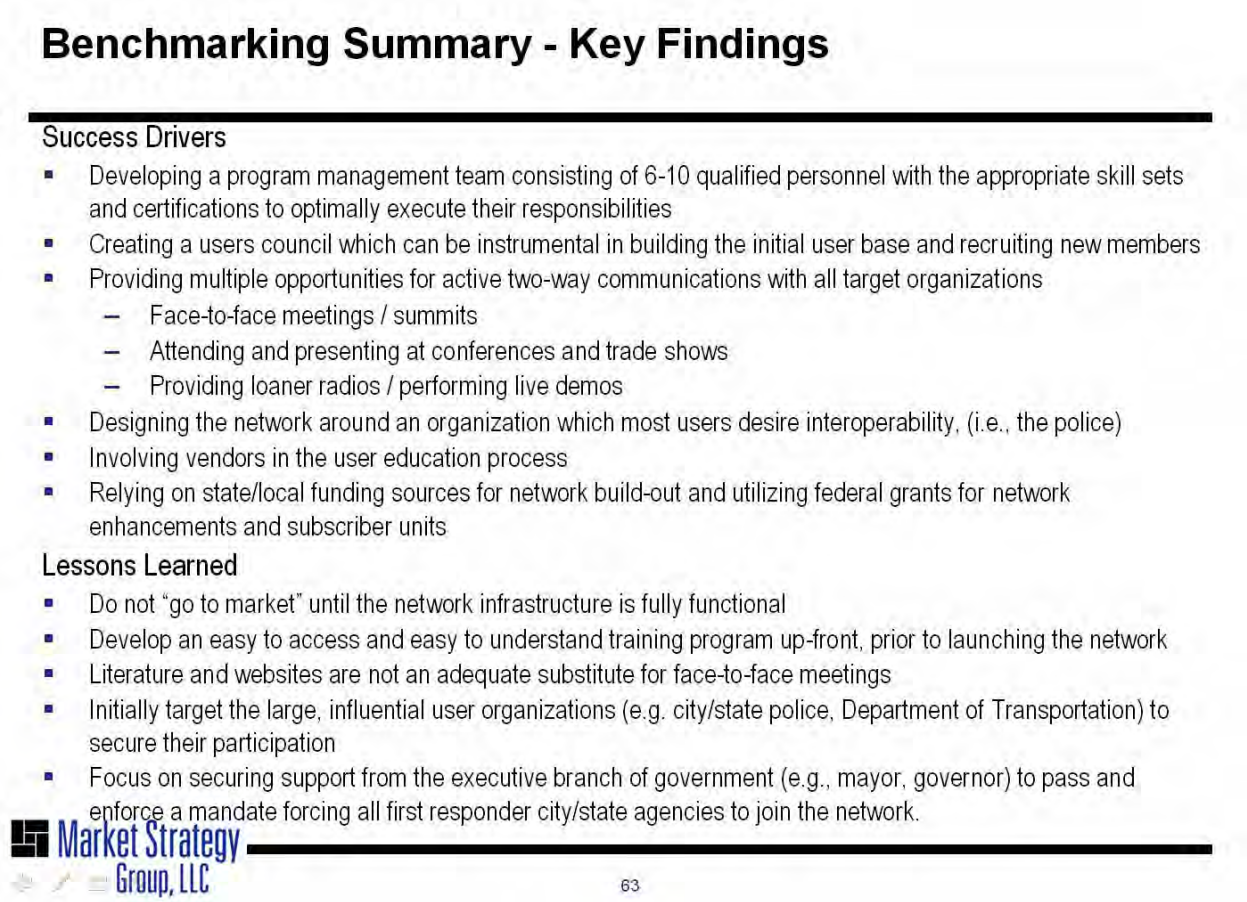
To address the issues with and skepticism of ALMR, a benchmarking study was conducted to better understand which practices worked at other organizations that were deploying area-wide LMR networks. Not all of the practices are relevant or can be easily deployed by the ALMR PMO. However, there are a lot applicable practices which could be utilized.

Working with the PMO, a total of 15 domestic organizations were identified. The PMO approved the final list of targeted benchmarks. The focus was interviewing a diverse set of networks, not just networks which had similar specifications to ALMR. The PMO approved a standardized 5-page telephone survey which was utilized to collect the data. The survey focused on collecting the following types of data:

- Network size and number of subscribers
- Gross monthly fees per subscriber unit
- Participating agencies
- PMO structure
- User group structure
- Funding mechanisms
- Primary outreach tools/tactics

At each organization, the program manager, or similarly situated individual, was identified and interviewed. Each interview lasted 45-60 minutes, and follow-up conversations were required for the some of the benchmarks. Only two organizations declined to participate.

Slide 63



This slide recaps the success drivers which were consistently displayed by a majority of the successful benchmarks. Several of these drivers have been captured in the recommendations section. These items were listed in that section because they had a proven track record of working in other similarly situated networks.

An item which was not cited in the recommendations was "providing subscriber unit support on a centralized basis." This can be very effective for cost control and ensuring quality, however this may be more applicable to a local network. From an ALMR perspective, establishing multiple regional support centers that adhere to a consistent cost structure and training regimen, so quality standards are constant, may be more relevant to ALMR.

Another key learning point is the lesson learned from the State of Pennsylvania. They launched their network prior to it being fully functional. This created a whole host of problems, most seriously a damaged reputation, which it took a long time to repair.

Slide 64

Network Profile

Network	# of Units	# of Sites	Responsible for Program Management
South Carolina	18,000	64	Inter-governmental agency
Colorado	18,000	93	Department of Information Technologies
Wyoming (build-out just started)	12,000 (projected)	57 (projected)	Department of Transportation (DOT), Telecommunications Program
CapWIN (Washington DC)	500	NA (runs on commercial wireless networks)	Inter-governmental agency
King County (Washington)	14,000	32	City of Seattle
Portland	11,000	15	Bureau of Information Technology (ComNet Division)
Pennsylvania (Projected 95% coverage in every county)	6,000 (50,000 projected)	High Profile Towers (200+ ft.): 209 (230 projected) Cell Sites (60 ft.): 200 (600 projected)	Office of Information Technology (OIT) in the Office of Administration (Office of Public-Safety Radio Services reports to the OIT)
Virginia (build-out just started)	4,500 (projected)	45	State Police

Market Strategy Group, LLC

64

See comments on next slide.

Slide 65

Network Profile (cont'd)

Network	# of Units	# of Sites	Responsible for Program Management
Indiana	12,050 (35,000 projected)	47 (126 projected)	Integrated Public Safety Commission
Illinois (build-out just started)	6,000 (15,000 projected)	186 (projected)	State Police and Central Management Services (CMS)
Mesa, AZ	2,500 (3,700 projected)	2	City Police/ City Fire
Michigan	17,500	189	State Police
Phoenix, AZ	10,500	25	City Police/City Fire/Information Technology Department
Alaska	5,800 (15,000 projected)	15 (87 projected)	Department of Defense (DoD) and Department of Military & Veterans Affairs (State agency)

Market Strategy Group, LLC

65

The important takeaway in this slide is that in most successful area-wide networks, the driving force is either the local/state police, or a group which understands communications/technology, such at the department of telecom or information technology. ALMR's approach is different, forming a consortium of representatives from multiple agencies that represent the primary users.

Slide 66

Gross Monthly Fee Per Subscriber Unit (SU)

Network	Access Fee	SU O&M	Total per SU	Additional Fees/Notes
South Carolina	$44 average (The range is $11.90- $75.00)	Covered in access fee	$44	State and utility customers receive a 15% equipment discount. $10 Voice Activation Fee, $100 Activation Fee for Data
Colorado	$0	Paid by user agency	Varies per user agency	$30 activation fee supports the user's group
Wyoming	$0	TBD (paid by user agency)	TDB	
CapWIN	$15-$30 commercial fee	N/A	$15-$30 minimum	Access fees may be considered in the future
King County	$26.75	$12.00 (paid by user agency)	$38.75	
Portland	$34.75	$17 (paid by user agency)	$51.75	$500-$800 Template Development (program set-up fee, configure programming and talk groups) $86.50/hr for Reprogramming fee

Market Strategy Group, LLC

66

See comments on slide 68.

Slide 67

Gross Monthly Fee Per Subscriber Unit (SU) (cont'd)

Network	Access Fee	SU O&M	Total per SU	Additional Fees/Notes
Pennsylvania (PA)	TBD	TBD	TBD	Currently, return-to-depot maintenance exists. In the future planned that the contractor will provide support at the user location.
Virginia (Projected)	$8-$17	TBD	$8-$17 minimum	
Indiana	$0	$4 (paid by user agency)	$4	$100 re-programming fee paid directly to Motorola
Illinois	$53.00	Covered in access fee	$53.00	$175 activation fee, which escalates in subsequent years for new users if they do not join after the first 90 days after system acceptance, (targeted for Sept. 2006)
Mesa	$25.00	$6 estimate (paid by user agency)	$31.00	Access fee may be revised after the first year to adjust for actual usage

Market Strategy Group, LLC

67

See comments on next slide

Slide 68

Gross Monthly Fee Per Subscriber Unit (SU) (cont'd)

Network	Access Fee	SU O&M	Total per SU	Additional Fees/Notes
Michigan	$16.67(paid in an annual installment of $200)	$25 (paid by user agency)	$41.67	$25 Activation Fee (one time fee only) Estimated annual fee for data capabilities (when available) - $650
Phoenix	$35.00	Varies (paid by user agency, PMO offers contracts with external vendors)	$35.00 plus SU O&M	Considering additional fees for activation and re-programming. All radios must be programmed by PMO personnel on a time & materials basis.
Alaska	TBD	TBD	TBD	Considering additional fees for activation, data, and type of usage

Analyzing these user fees will assist in developing a fair and reasonable cost share plan for ALMR.

Market Strategy Group, LLC

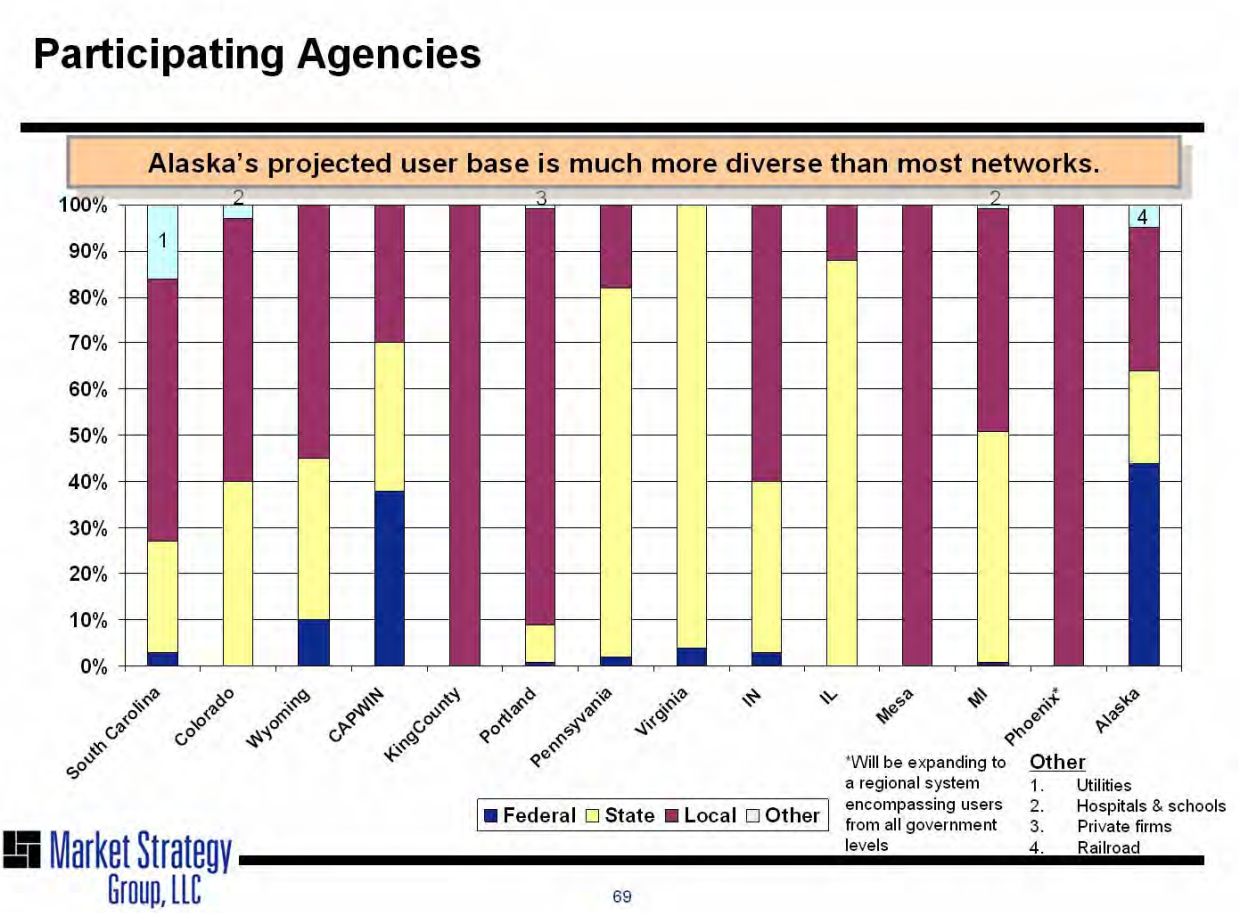
68

These fees are all based on trunked networks. Many networks do not cover the subscriber unit O&M, as it is considered the responsibility of each individual agency. Additional fees can be generated from activation and re-programming charges. In addition, in South Carolina, itemized billing occurs, so users are charged extra for services such as: wide-area roaming, interconnect, and direct inward dialing (DID), among others.

These amounts exclude any data related charges. The only network currently charging extra for data services is South Carolina. Other networks have plans for launching data, but have not yet developed a pricing structure

Some networks, such as Wyoming that are experiencing a huge state budget surplus, are utilizing those funds to cover the subscriber unit access fees. Wyoming realizes the importance of developing a statewide network and is strongly encouraging all potential users to join. Colorado is another example where primarily state funding is being utilized to cover users' access fees.

Slide 69



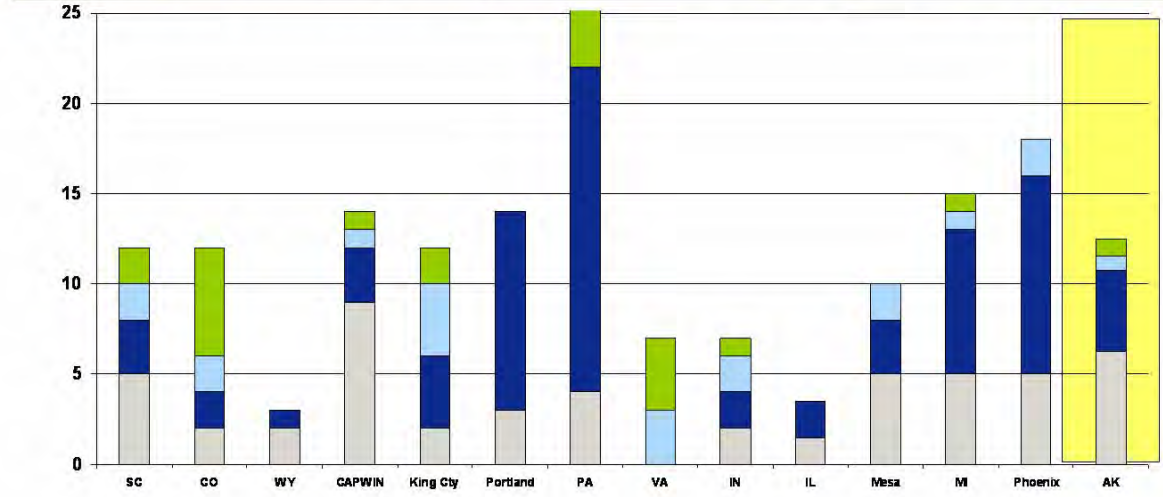
With the exception of South Carolina, ALMR is the most diverse network in terms of number of subscribers from different types of government agencies. The only reason that South Carolina has so many users from a public utility is that the statewide utility previously owned the infrastructure, and they transferred ownership of the assets to Motorola, with the understanding that they would be able to remain on the system.

The diversity of the ALMR user base is unique because as needs and budgetary issues vary widely across the potential user base.

Slide 70

Program Management Office Structure

Optimal PMO size should not exceed 10 FTEs (Full Time Equivalents). However more personnel may be required if the diversity of agencies increases.



Market Strategy Group, LLC

70

The primary reason the ALMR PMO size appears to be higher than the average is due to the diversity of its potential users. The PMO requires additional support to address the needs of its multiple constituents.

Slide 71

Executive Committee/User Group Structure

Network	Description
South Carolina	There are 20 members on the executive committee. An agency with more than 500 units automatically gets a seat. Meetings every 2 months, plus on-line meetings for emergency purposes. Full user group contains 100-120 members and meets twice annually.
Colorado	Contains technical and operational committees. 75 active members. Meets monthly in different regions.
Wyoming	Public Safety Communications Commission: consisting of 17 members, one from each major agency, including the general public and tribal governments. Five workgroups have been created. Key priorities include: setting standards, interoperability issues, policy decisions, and developing recommendations for legislative actions.
CapWIN	The Executive Leadership Group (ELG) has recently been expanded to 18 "Commissioners". This group represents 18 CapWIN local, state, and federal participants. A proposal is currently under review for a new transportation program to be co-located within the existing CapWIN facility. If this proposal is approved, the ELG will be expanded to 22 Commissioners with the additional personnel coming primarily from the local, state, and federal transportation industry. There is also 3 working groups: operational, technical, and coordination, that includes 40 members with at least 1 individual from each agency.
King County	Size of group differs for each of the 4 regions that compose the network. Separate executive and operational committees exist in each region.

Market Strategy Group, LLC

71

See comments on slide 74.

Slide 72

Executive Committee/User Group Structure (cont'd)

Network	Description
Portland	Although, ComNet is the sole manager/operator of the 800MHz LMR system, it is required that each agency appoint a single "800MHz" point of contact, referred to as the "trunking coordinator". ComNet, in conjunction with the BOEC (Portland's Bureau of Emergency Communications/Dispatch for Multnomah County) formed a User Board which meets monthly. The User Board meetings are a forum for users to discuss system related ideas, offer input, share concerns, etc. The 75 trunking coordinators are involved in managing their respective groups' radio inventories, radio templates, and internal protocols, among other tasks. ComNet oversees these activities as the overall system operator. Trunking coordinators are kept updated with all system related updates, maintenance procedures, etc. via e-mail, fax, and voice announcements.
PA	Though user groups have always existed, prior to August 2004 the PMO was not taking much guidance from the user groups and these groups were not used to their full potential. This led to the PMO accepting a system that met the original contract requirements but because of the time lapse between the contract requirements and software delivery did not meet user requirements. Since August 2004, input from user groups is a key component of the requirements validation process. There are three user groups in PA: 1) Executive Advisory Board – composed of deputy secretaries from the 23 participating state agencies and serves a directors role; 2) Operations Committee – composed of working-level people in all the state agencies and gives extensive input into network requirements/ policies; and 3) Operations Oversight Committee – composed of PA State Police, Comptroller, and PMO Management is designed to deal with major day to day project issues.

Market Strategy Group, LLC

72

See comments on slide 74.

Slide 73

Executive Committee/User Group Structure (cont'd)

Network	Description
Virginia	Each of the 20 user agencies is a member of the STARS (Statewide Agencies Radio System) and is on the User Agency Requirements Committee (UARC). Quarterly meetings are conducted; more if required. Duties include 1) advise on the needs of member agencies for the planning, design, establishment, and operation of STARS; 2) advise on proposals for other federal, state, or local agencies to join STARS; and 3) assist the management team with the development of a comprehensive management plan and procedures.
Indiana	No current user group exists, but an active executive council and the Indiana Public Safety Commission (IPSC) with 12 members handles funding and network build out issues. These members are typically key decision-makers within their organizations. The PMO acts as a staff for this council. Operational and procedural committees which contains 10-11 members, meets informally to discus technology issues and makes recommendations to the executive council. There is currently no plan to develop a statewide user group. However, state agencies have separate user groups which provide informal feedback to the IPSC.
Illinois	An executive council representing 13 different agencies plus 5 sub-committees with more than 100 members was established, but has not met for 2 years. They have lost momentum because the program management staff was negotiating the Detailed System Design (DSD) with the vendor. This issue was recently resolved in March 2005. Though several original executive council members have retired, the council has been jump started.

Market Strategy Group, LLC

73

See comments on slide 74.

Slide 74

Executive Committee/User Group Structure (cont'd)

Network	Description
Mesa	Has 3 different groups. The executive committee with 7 members, composed of police and fire chiefs handle all public safety issues. The radio manager's group with 9 members, composed police and fire personnel handle operational issues. The advisory committee with 5 members composed of assistant police and fire chiefs, plus an ex-officio from Phoenix, define policy.
Michigan	An executive board consisting of state and local agencies was formed to address policy issues. However, the board members were not very well versed in LMR technology and therefore this board was not very effective. The state recently re-started the executive board, with a push from locals, who may desire a stronger voice in policy-making decisions.
Phoenix	Multiple committees have been established. On the project implementation side there is a steering committee with 6 members, a project management/transition management group also with 6 members, plus a staff of 10-15 which includes technical personnel plus trainers, and technical team which is represented by the IT department. (The IT department represents the municipal departments). On the operational side, there is an advisory committee with 6 members and a radio manager group (who represent the end-users) which consists of 4 separate teams of radio-related personnel. Though no user group exists, it is being considered.
Alaska	An executive council representing the four major constituencies has been formed and has approved the establishment of a user group. The DoD has recently hired a facilitator to start up the user group.

Structuring a user group focused on different areas (operations, outreach, funding, public policy, technical/engineering) should be established at the earliest stages of network planning.

Market Strategy Group, LLC

74

This point has been emphasized throughout this report: establishing a well-functioning user's council representing all user agencies is integral to the network's success. The size is driven by the number of users/agencies represented. The types of committees can vary widely, and suggested committees are listed on slide 46.

Slide 75

Funding Mechanisms for Infrastructure and Ongoing Network O&M

Network	Self Funded	Taxes/Fees Levies	Federal Grants	State Budget	Local Budget
South Carolina	100%				
Colorado			35% (For initial build-out only)	45% (For initial build-out only)	20% (For initial build-out only)
Wyoming			18% (of current project funds)	82% for initial plus 100% ongoing O&M	For local-specific projects only
CapWIN		None, but may be considered in the future			
King County	100% for ongoing O&M	100% of initial funding			
Portland	100% for initial funding plus ongoing O&M				
Pennsylvania				100% for initial and ongoing O&M	

Market Strategy Group, LLC

75

See comments on slide 77.

Slide 76

Funding Mechanisms for Infrastructure and Ongoing Network O&M (cont'd)

Network	Self Funded	Taxes/Fees Levies	Federal Grants	State Budget	Local Budget
Virginia			Will apply for applicable grants	100% for initial and ongoing O&M	
Indiana		53% (DMV Tax) for initial plus ongoing O&M	47% for initial plus ongoing O&M		
Illinois	100% (ongoing O&M)		100% of PMO operations (~$1.2M/year) for 1 year only	100% of the initial infrastructure fees will be paid by the external vendor. The state is responsible for paying for shared sites expenses, and guarantees payment to vendor for 6,000/users month upon system acceptance.	

Market Strategy Group, LLC

76

See comments on slide 77.

Slide 77

Funding Mechanisms for Infrastructure and Ongoing Network O&M (cont'd)

Network	Self Funded	Taxes/Fees Levies	Federal Grants	State Budget	Local Budget
Mesa	100% (ongoing O&M)				100% for initial build-out
Michigan	5% for ongoing O&M		7.5% for ongoing O&M	100% for initial. 87.5% for ongoing O&M	
Phoenix	100% (ongoing O&M)				100% for initial build-out
Alaska (ongoing funding is TBD)			99% (initial)	1% (initial)	

In all networks, the city or state play a pivotal role in funding the initial build-out and/or ongoing O&M. Significant reliance on federal-related funding sources for infrastructure build-out and O&M is very rare. Dependence on local/state, as opposed to federal sources is pursued more frequently because the PMO typically has a greater sphere of influence over these funding sources.

Market Strategy Group, LLC

77

If an organization is self-funded, that indicates they are receiving no funding from sources other than user fees. The key takeaway in this slide is that ALMR's funding mechanisms with such heavy reliance on federal funds for the initial build-out is an anomaly. For the initial build-out most agencies rely on state or local funds. In addition, for ongoing O&M, most networks rely on their access fees, taxes/levies, or state funding. Only Indiana relies on federal funding for ongoing O&M, and their situation is unique. Federal agencies such as the Center for Disease Control and local DoD installations have approached the statewide PMO and requested participating in the network. The PMO typically agrees to let them on the network, however, they are required to either contribute assets or pay for ongoing network O&M to secure the right to use the network. The statewide PMO is not actively targeting federal agencies at this time due to their focus of securing local and state users. However, they see future growth in bringing on federal users.

ALMR may want to consider shifting their infrastructure funding strategy to become more aligned with other benchmarks, and should consider developing an ongoing O&M funding strategy that is not so reliant on a single agency.

Slide 78

Primary Outreach Tools/Tactics

Network	One-on-One Meetings/ Briefings	User council meetings	Website	Community Outreach/ Conferences	Literature
South Carolina	Very effectively leveraged the Motorola Sales Force. Provided units for 30-day trial period to potential users.	Frequently consulted. Used to secure new users, gain funding, make network decisions, and develop new governance procedures.	Never developed an extensive site because it was not requested by the agencies.	Attended: NENA, APCO, NASTD, Police/Fire Chiefs. Focused on show with decision-makers attending.	Detailed coverage and propagation maps were very useful.
Colorado	Did a lot of live demos statewide. Generated a high level of interest that resulted in agencies approaching the state requesting to join.	Acted as an effective mechanism as potential users approached members of the council to secure peer feedback.	Leveraged as a repository for a wide range of network specific content and industry trends.	During planning stages conducted/attended many conferences. Ongoing participation as requested.	Partnering with Motorola to develop content, as well as developing in-house documents.

Most effective tactic

Market Strategy Group, LLC

78

See comments on slide #84.

Slide 79

Primary Outreach Tools/Tactics (cont'd)

Network	One-on-One Meetings/ Briefings	User council meetings	Website	Community Outreach/ Conferences	Literature
Wyoming	See community outreach/conferences.	The Public Safety Communications Commission has formed a working group which is responsible for: training, outreach, operations, and user interface coordination.	Shared all documents. Business case, executive summary, and FAQ were most valuable.	Conducted informational meetings in every state county which included: county commissioners, emergency service providers, the general public, and the press. Included vendors at meetings who were only allowed to respond to questions, not proactively "sell". Customized smaller scale meetings continue to be held. Key messages included: new features and interoperability.	All relevant was posted to the website. Communication pieces have also been leveraged to successfully secure additional funding.
CapWIN	Very effective. Successfully Leveraged SAFECOM/PSWIN content during these meetings. Targeting federal, state, and local users.	Not being leveraged as much as it could. Recently started using the council to target local users.	Very comprehensive and easy to navigate.	Recently hired a dedicated marketing manager. Have targeted trade associations: IAPC, IAFC.	Extensive newsletter contain network updates, contact info, and personnel profiles.

Most effective tactic

Market Strategy Group, LLC

79

See comments on slide #84

Slide 80

Primary Outreach Tools/Tactics (cont'd)

Network	One-on-One Meetings/ Briefings	User council meetings	Website	Community Outreach/ Conferences	Literature
King County	Always had a Motorola rep at each meeting to present and address questions. Provided detailed documentation on network equipment.	Very effective. Made presentations that generated potential users to approach the user council personnel.	Not utilized.	Focused on addressing rumors around feature functionality and network capability.	Not utilized.
Portland	Utilized a commissioned sales rep, funded by ComNet (the city) to secure new users. Live demos were very effective in convincing users to join.	Utilized effectively as an informal communications channel to help generate positive "word of mouth," especially for departments seeking inter-agency communications. Potential leads were transitioned to the sales rep for additional outreach/education.	Not leveraged optimally.	The city government passed a mandate requiring all city agencies to join the network. The county agencies followed to gain communication with the city.	Provided a lot of content: newsletters, progress reports, mass mailings.

Most effective tactic

Market Strategy Group, LLC

80

See comments on slide #84

Slide 81

Primary Outreach Tools/Tactics (cont'd)

Network	One-on-One Meetings/ Briefings	User council meetings	Website	Community Outreach/ Conferences	Literature
PA	Currently conducting meetings to reestablish communication links with users. (Prior PMO did not always view user input as a viable option).	Though there has always been a users council, the PMO prior to August 2004 did not take full advantage of the opportunity to receive input from users. Since August 2004, the PMO is actively working with the users' groups to design and validate the system.	www.radio.pa.us There is also an intranet site for all state users which also offers controlled access for a few non-state users.	A customer support manager is actively engaged in a targeted marketing communications/ outreach initiative.	None currently, but is in development.
Virginia	Not actively recruiting users outside of state government, but have met with local agencies at their request. Motorola performs communication and cost assessment for local organizations.	The user group includes representatives from each member state agency and institution. Provides advice regarding the planning, design, establishment, and operation of STARS. In addition, advises on proposals for other federal, state, or local agencies to join STARS. Assists with the development of a comprehensive management plan and procedures for the use and operation of STARS.	Primarily used as a communications tool for existing users.	Attended and presented at multiple conferences: APCO, IAPC, and IAFC, among others.	Not utilized.

Most effective tactic

Market Strategy Group, LLC

81

See comments on slide #84

Slide 82

Primary Outreach Tools/Tactics (cont'd)

Network	One-on-One Meetings/ Briefings	User council meetings	Website	Community Outreach/ Conferences	Literature
Indiana	The Governor formed the Integrated Law Enforcement Council (ILEC) which held multiple "Governor's Summits" on a statewide basis which was attended by more than 600 agencies. Very impactful.	Though not yet formally started, the IPSC (executive council) works to secure funding and provide information to all participating agencies.	Provides project updates and contact information.	Attended trade shows and conferences. Had a dedicated community liaison responsible for sharing information on the network with agencies as well as the general public.	Testimonials from current users, and Governor's Summit attendees helped generate interest and led to more organizations joining.
Illinois	Conducted forums with sheriffs, 911 boards, and chiefs of police and fire that were primarily focused on decision-makers.	Started conducting meetings, but the network deployment was delayed, so the groups stopped meeting on a regular basis.	Motorola's website contains network backgrounder, FAQ, and contact information.	Presented at national trade shows (PSWIN/SAFECOM) and wide-area sheriff meetings. Targeted conferences with very large number of attendees.	Mainly provided network background and contact information. Developed jointly with Motorola.

Most effective tactic

Market Strategy Group, LLC

82

See comments on slide #84

Slide 83

Primary Outreach Tools/Tactics (cont'd)

Network	One-on-One Meetings/ Briefings	User council meetings	Website	Community Outreach/ Conferences	Literature
Mesa	Typically held meetings with larger groups which included both users and decision-makers.	Formed informal user groups to collect information on feature functionality and requirements. Let users test equipment for up to 1 year and select features they wanted. Re-tested equipment and changed the suite of features based on user feedback.	Very limited use. Considering website for on-line training in the future.	Participated in trade shows with limited effectiveness because potential users wanted to actually demo the equipment. "Not very persuasive."	Limited use.
Michigan	The PMO and state police each hired lobbyists to personally meet with as many state legislature personnel and their staffs. The former governor desired a legacy, "the largest public safety network in the US," and passed a mandate that all state agencies join.	Underutilized the executive council personnel because they did not have expertise in LMR. Did not have enough local representation initially, but this is changing to reflect the new user base.	Not required up-front. Used currently to provide network updates.	Not utilized initially, but currently being successfully utilized to attract local users. On-site coverage testing with locals to compare to their current system coverage is being frequently used. After an agency expressed interest in joining, they were actively targeted by the LMR training department who reformed a proactive marketing role.	Used extensively for user training, but overall limited use.

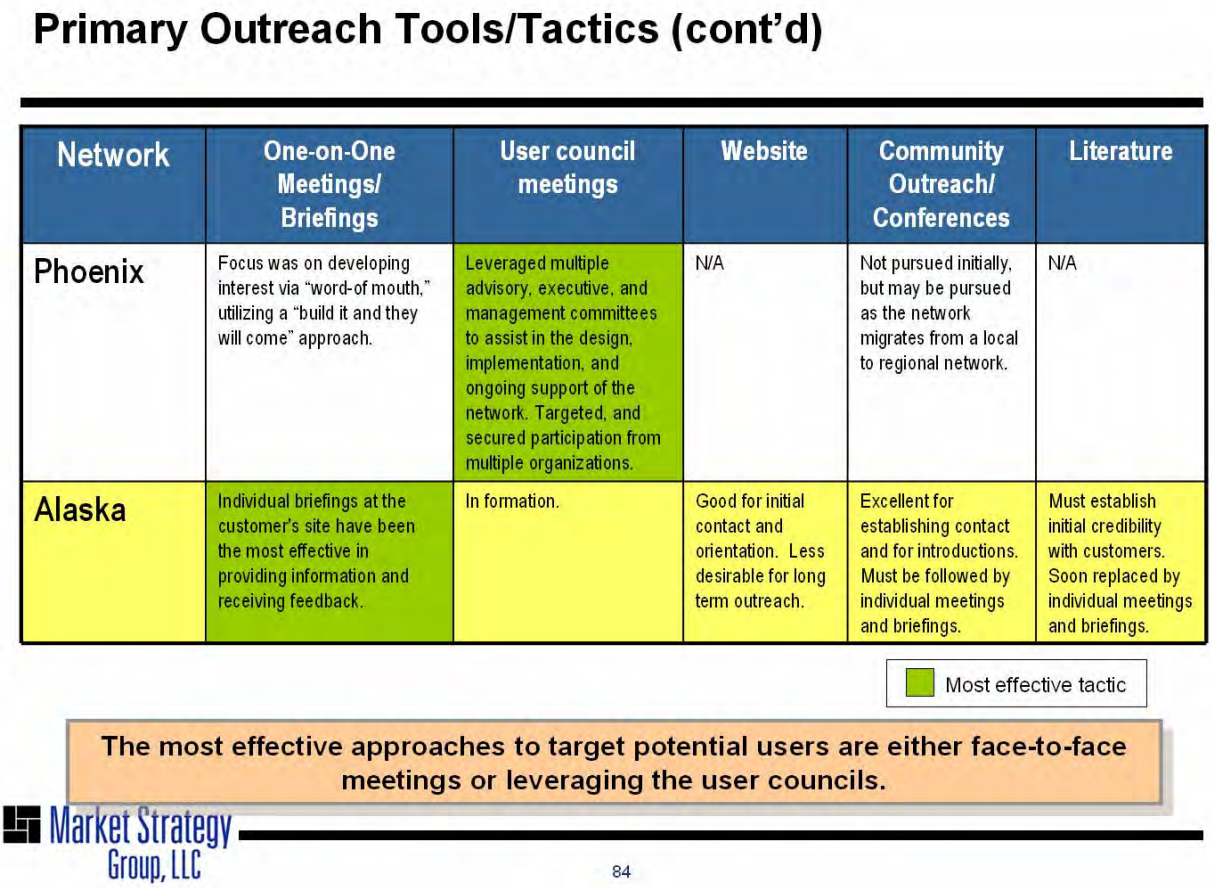
Most effective tactic

Market Strategy Group, LLC

83

See comments on slide #84.

Slide 84



In almost every benchmarked organization the most effective tactic to reach users/potential users was either one-on-one meetings/briefings or a user's council. The other tactics, website, community outreach/conferences, and literature were considered secondary outreach tools.

It is very important to "press the flesh" with potential users. Creating a positive "buzz" around ALMR will help attract more users. Many benchmarked organizations commented that these meetings helped launch a *Field of Dreams* marketing initiative, a "build it and they will come" approach to securing new users.

Slide 85

Additional Findings

Network	Technology	Barriers to Joining	Connectivity	Local Support	Vendors Utilized
South Carolina	800 MHz, Motorola SmartZone	Cost, users do not want to share network risk	Microwave, T-1	20 Motorola service shops statewide plus 6 Motorola sales reps.	Motorola
Colorado	800 MHz, Motorola V6.3 ASTRO SmartZone	Funding	Microwave	State run 42 technicians in 13 radio shops. Some participants use in-house resources.	Motorola, EFJ, Kenwood
Wyoming	VHF 150 MHz, Motorola ASTRO	The cost of P25 trunking subscriber equipment; local skepticism of a state agency project	Microwave, some fiber in Cheyenne	State run; 17 technicians in 8 radio shops.	Motorola, EFJ

Market Strategy Group, LLC

85

See comments on slide #90.

Slide 86

Additional Findings (cont'd)

Network	Technology	Barriers to Joining	Connectivity	Local Support	Vendors Utilized
CapWIN	TCP/IP over commercial wireless networks (e.g., Verizon, Sprint)	None	Commercial wireless networks	Contract with IBM. Subscribers responsible for subscriber equipment.	IBM
King County	800 MHz, Motorola SmartZone	Concern over ability to deliver proposed feature functionality; cost.	Primarily microwave	Performed by each user agency.	Motorola, EFJ
Portland	800 MHz, Motorola SmartZone	Required by city mandate to join.	Primarily microwave, plus some fiber	100% Self-maintained	Motorola

Market Strategy Group, LLC

86

See comments on slide #90.

Slide 87

Additional Findings (cont'd)

Network	Technology	Barriers to Joining	Connectivity	Local Support	Vendors Utilized
Pennsylvania	IP-based trunking	Previously, lack of confidence in the network due to absence of active communications with users. (This has been fixed). Expectations have been set to achieve 95% coverage in all PA counties and the State Police require this level of coverage before committing fully to the network.	Primarily microwave	M/A-Com for maintaining subscriber units.	M/A-Com (radio network) Alcatel (microwave network)

Market Strategy Group, LLC

87

See comments on slide #90.

Slide 88

Additional Findings (cont'd)

Network	Technology	Barriers to Joining	Connectivity	Local Support	Vendors Utilized
Virginia	VHF 150 MHz, Motorola ASTRO	None. VA State Police operated. Other state agencies required to join. Not actively recruiting locals.	Microwave (94 sites)	Virginia State Police operate 7 shops with 34 technicians.	Motorola
Indiana	800 MHz, Motorola SmartZone	Individual agencies do not want to give up control. Costs of maintaining dual systems after statewide system was operational.	Primarily T-1 (85%), microwave (15%) which is owned by the state police is also utilized.	Outsourced to: Motorola with 23 technicians statewide, and 1 EFJ shop.	Motorola, EFJ
Illinois	800 MHz, Motorola SmartZone V6.2	Cost; concern with the delivery of the detailed system design, delays in network construction.	20% Microwave, 80% Fiber/DS3/ DS1	Will rely exclusively on Motorola personnel.	Motorola exclusively

Market Strategy Group, LLC

88

See comments on slide #90.

Slide 89

Additional Findings (cont'd)

Network	Technology	Barriers to Joining	Connectivity	Local Support	Vendors Utilized
Mesa	800 MHz, Motorola Simulcast SmartZone V6.3	Giving up control, do not trust the city, cost.	Primarily microwave	14 technicians employed by the city.	Motorola, EFJ, Kenwood, and Technosonic
Michigan	800 MHz, Motorola SmartZone V 6.1/ 6.2	Ability of locals to secure funding; fire department's (FD) ability to use paging; volunteer FD ability to pay.	99% microwave 1% fiber leased line (to facilitate connectivity to the dispatch centers)	50 technicians in 8 radio shops. All state employees.	Motorola, Kenwood, EFJ

Market Strategy Group, LLC

89

See comments on slide #90.

Slide 90

Additional Findings (cont'd)

Network	Technology	Barriers to Joining	Connectivity	Local Support	Vendors Utilized
Phoenix	Motorola ASTRO 25 Integrated Voice and Data V6.x with Omnilink	Funding; developing a regional governance structure that provides all participating agencies a decision-making role	Majority microwave, some fiber	Service shop with 25 technicians, all city employees, plus a Network Operations Center with four personnel. An external vendor for after hours monitoring and dispatch, software support, and upgrades, is also utilized.	Motorola, Kenwood, EFJ
Alaska	Motorola P25 SmartZone V6.5	Cost of radios and user fees; coverage concerns; network complexity, ease of use	Mostly microwave, some fiber	Multiple authorized local vendors which have been certified by the infrastructure provider.	Motorola, EFJ

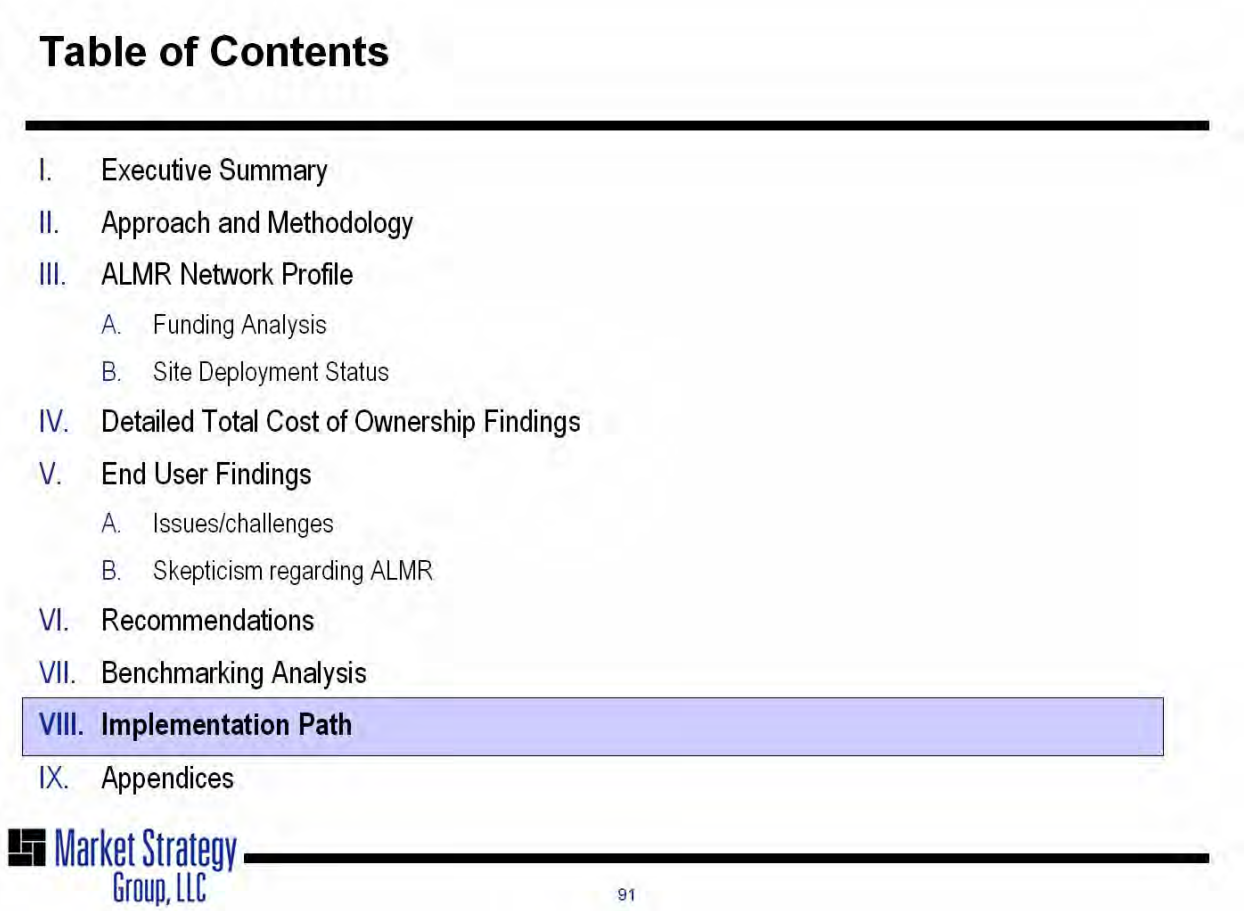
Market Strategy Group, LLC

90

This, and the previous four slides, capture additional details that were contained in the survey instrument. Most area-wide networks are Motorola trunked systems utilizing microwave connectivity, and multiple subscriber unit vendors. Several organizations have deployed either a local/regional radio shop approach to maintaining subscriber units. In some instances the maintenance is fully outsourced to the vendor who in turn may rely on local firms for fulfillment. However, it appears the PMO desires to maintain some element of control over subscriber unit repair.

Another important finding is identifying the primary reasons for not wanting to join the network. The primary drivers are cost, lack of trust in the new network, or a strong desire not to give up control. Through user education and outreach these issues can be successfully and succinctly addressed.

Slide 91



The final section briefly discusses the proposed implementation path that the PMO should pursue in the short-term to begin addressing the issues surfaced in his report.

Slide 92

Implementation Path – 30 / 60 / 90 Day Plan

Action	30 Days	60 Days	90 Days
Share TCO Report Findings with ALMR Team	✓		
Complete Cost Share Plan	✓		
Share Cost Plan with ALMR Team	✓		
Deliver Read-out of TCO and Cost Share findings to participating organizations		✓	
Provide testimony to the Alaska State Legislature			✓
Perform *SATS (State of Alaska Telecommunications System) Chargeback* project			✓
Marketing Communications/Educational Outreach Initiative			✓
Secure written commitment from participating organizations to join ALMR			✓

Market Strategy Group, LLC

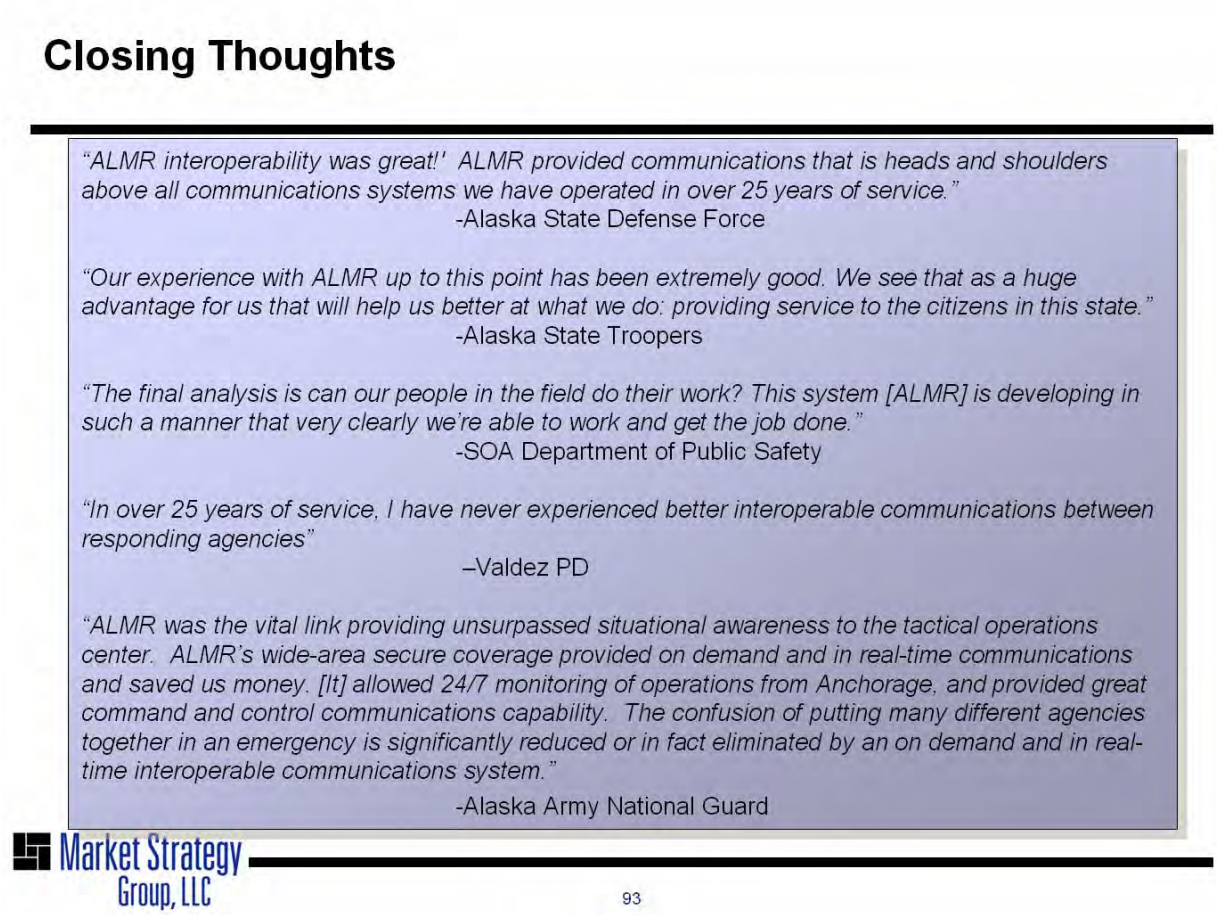
92

Over the next 30 days, a key deliverable is providing a read-out of the TCO Report to additional high level state and federal personnel. In addition within the next 30 days the cost share plan will be completed. A summary of the cost share plan and TCO report will be compiled by the PMO and ALMR Executive Council, with support from Market Strategy Group and will be presented in-person (if possible) to all the agencies who were interviewed (see slide 10). This presentation will clearly show what each individual agency is paying today, and what they will be paying if they joined ALMR. It will provide an “apple to apples” cost comparison.

In the next 90 days, additional projects related to the ALMR deployment will be performed. Market Strategy Group will be working with Steve Eason and Stan Herrera from the DOA to develop a chargeback plan for the SATS network. In addition a full-scale education/outreach effort will be pursued with the ultimate goal of increasing ALMR user penetration. Several of the recommendations mentioned in this report will be pursued with the ALMR’s concurrence.

The dates presented, 30/60/90 are not precise. They are intended to “put a stake in the ground” regarding when the deliverable should be completed.

Slide 93



Personnel who have already experienced ALMR typically become advocates regarding its performance. The quotes listed represent a cross section of federal, state, and local agencies that have had the opportunity to utilize ALMR. The key message to the PMO and the ALMR Executive Council is that once personnel use ALMR, they quickly experience the benefits over their current conventional system, and with proper coaching can be converted into active advocates to help secure new ALMR users.

Slide 94

Appendices

Market Strategy Group, LLC

94

The appendix contains 48 slides. A total of 39 slides are summaries of the data that was captured during the interviews. The remaining slides provide information on the following:

- Additional background content on ALMR
- Additional technical benefits of ALMR
- Summary of ALMR-compliant assets which could be contributed to the new network
- Comparative data on the 6 levels of interoperability
- Contact and contract information

The three slides that contain additional notes are slides 97, 98 and 101.

Slide 95

ALMR Goal

Create partnerships across federal, state and local jurisdictions to build and operate an interoperable land mobile radio system in Alaska.

The goal will be achieved through:

- ✓ *immediate transition to new system,*
- ✓ *planned migration over time and*
- ✓ *integration of existing systems.*

Market Strategy Group, LLC

Source: ALMR Presentation to DNR Forestry, Joe Quickel, Dec 27, 2004

95

Slide 96

ALMR Objectives

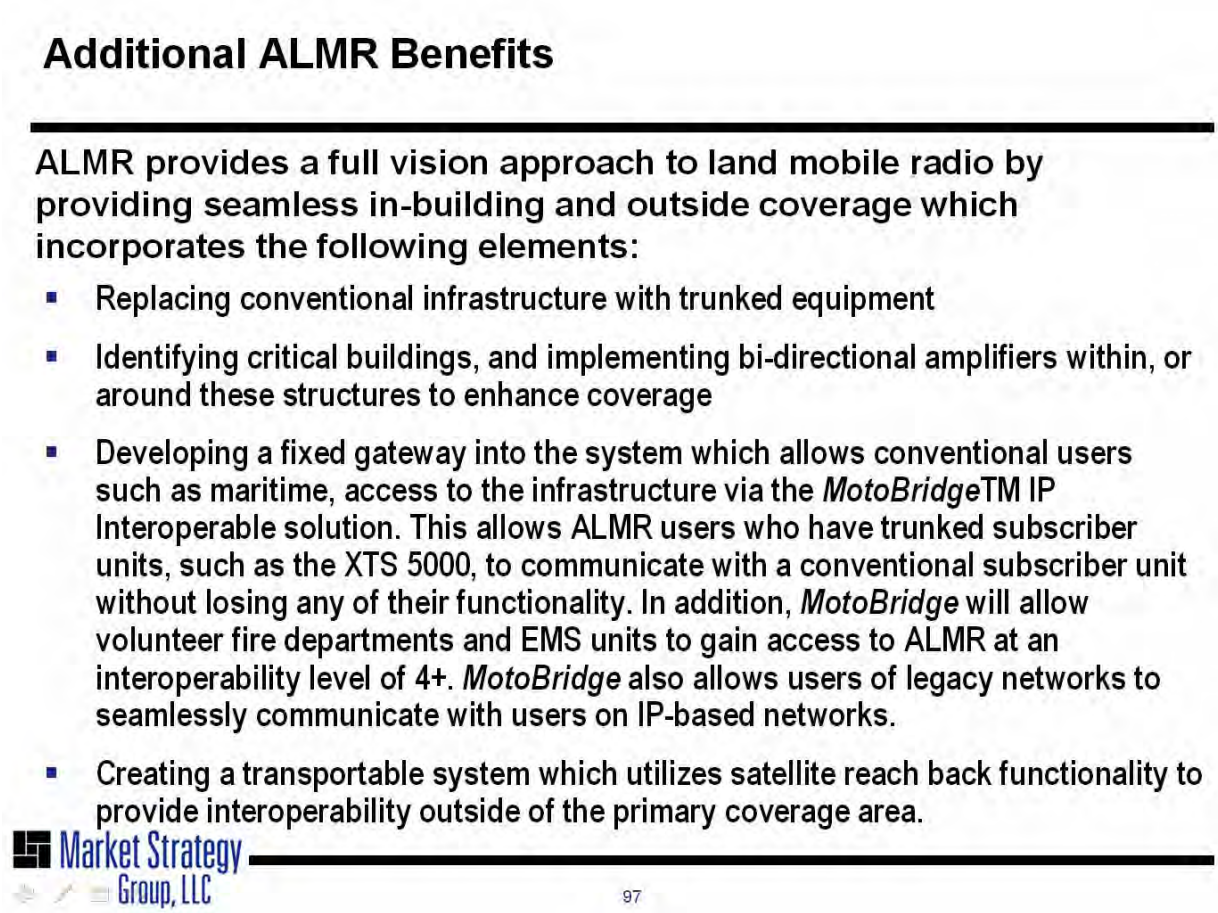
- Enhance personnel safety, security and operational capabilities
- Backwards compatibility with existing systems while leveraging new technology
- Reduce spending of federal, state and local agencies
  - Share infrastructure and costs throughout system phases by utilizing existing resources and assets
  - Cost burden sharing system infrastructure operations & Maintenance (O&M)
- Support Homeland Security initiatives
- Develop fiscally sound business model for full system implementation, operations and Maintenance

Market Strategy Group, LLC

Source: ALMR Presentation to DNR Forestry, Joe Quickel, Dec 27, 2004

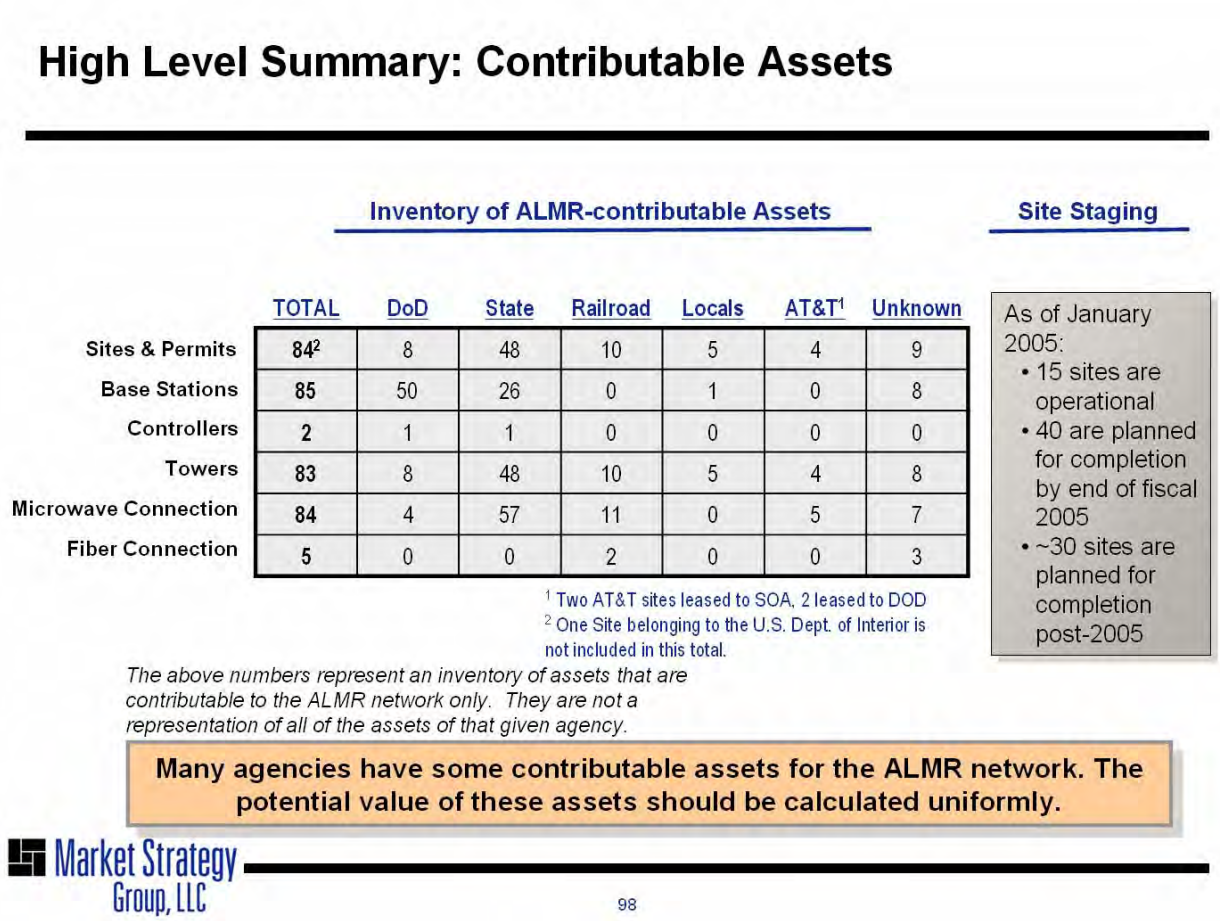
96

Slide 97



This slide contains a listing of additional ALMR benefits that have an engineering/technical focus.

Slide 98



This slide is a summary of the potential ALMR-compliant assets that could be contributed to the new ALMR network to enhance its coverage and make it more robust. The PMO will need to decide how much they will pay for each asset type, realizing that the amount should be fixed to minimize valuation issues. Just because an asset is available and the owner is willing to contribute it, the ALMR is under no obligation to procure the asset. A determination regarding which assets could be accepted as contributions will most likely be based on the coverage maps and system design analysis (SDA).

Slide 99

SAFECOM/PWSN Interoperability Standards – Additional Details

Detailed Description of Each Level
All radios are built to the Project 25 standard and talk to each other via the 'flip of a switch'. Agencies retain control of their own communications, while sharing a common infrastructure. The network can be immediately reconfigured as needed to support routine and emergency situations, allowing users to communicate with advanced features over a wide area.
Similar to the way roaming works in a cellular network, users stay in touch when outside the range of their home network. Roaming requires pre-arranged agreements with neighboring jurisdictions and is best suited for events where three to seven agencies may become involved. Each system must have enough capacity to handle radio traffic from everyone who responds to an incident in its area. Some solutions are vendor-specific, while others support standards-compliant systems from multiple vendors.
Gateways are switching devices that allow incompatible users to communicate with each other. In the event of a disaster, a dispatcher or gateway works as a central point to patch two different radio users together. Gateways require pre-incident planning to be implemented and are considered temporary solutions.
Mutual aid networks are the most commonly used approach by many agencies. Users must operate compatible radio units and manually switch to assigned frequencies when instructed to do so. This approach delivers coverage over a medium range for a small (2-4) number of agencies.
Users can talk directly to each other, at least within a small geographic area. Many legacy networks support this approach, which is best used in situations where only two or three different agencies are collaborating.
This strategy is dependable and fast to implement as long as one agency has enough spare radios and network capacity. Best applied to small, pre-planned events where there's time to distribute the equipment in advance.

Market Strategy Group, LLC

99

Source: Motorola's Six Levels of Interoperability

Slide 100

SAFECOM/PWSN Interoperability Standards – Comparison

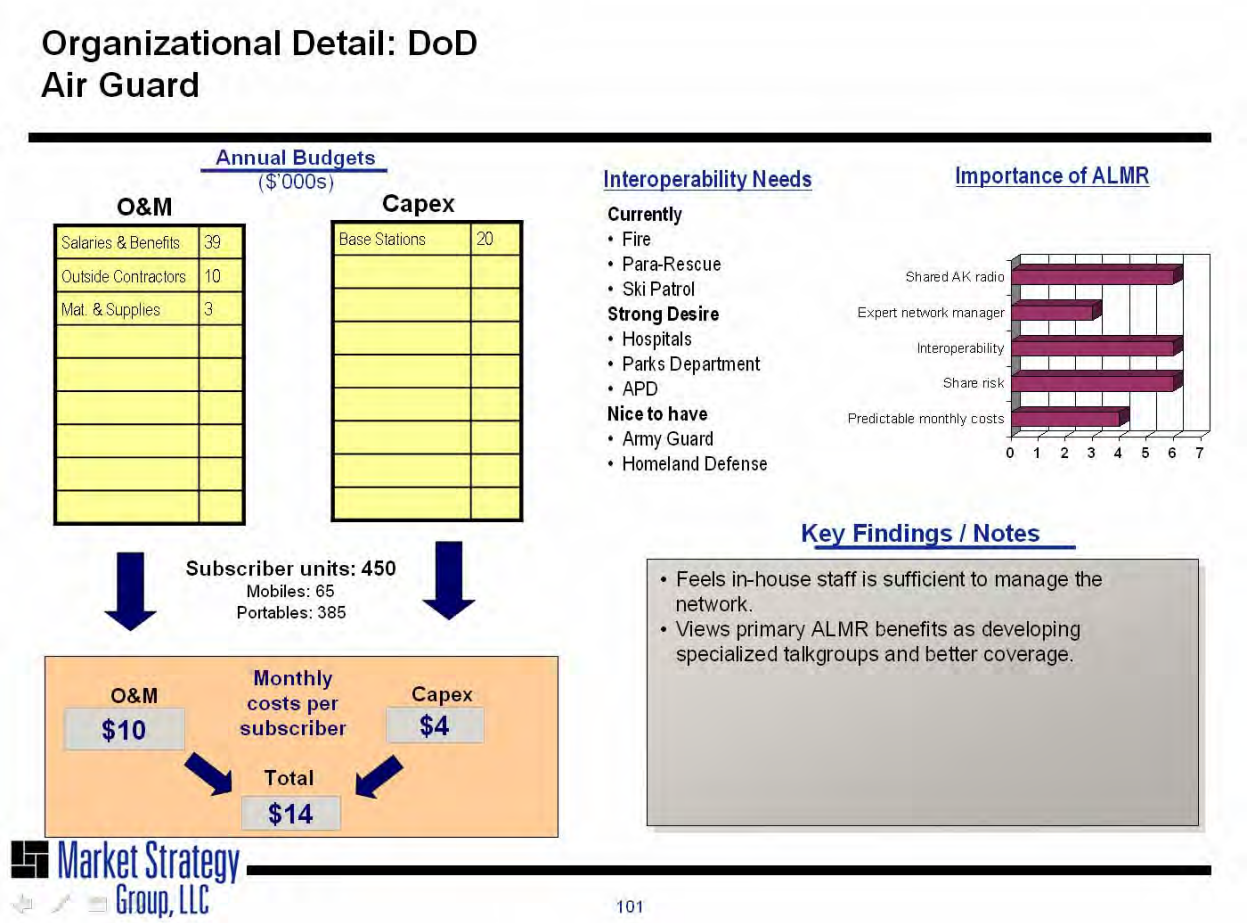
	Network Size	Subscriber Units	Number of Agencies	Type of Use	Geography
L6	Extensive	P25 radios – talk with the "flip of a switch"	Many	Heavy daily use by multiple agencies, highly secure, encrypted, etc.	Wide area
L5	~10 base stations	Types could vary; units should be able to support standards from multiple vendors	3 to 7	Must pre-arrange frequencies used, extensive pre-planning required	Wide area
L4	A few base stations	Can be incompatible	~4	Temporary solution for connecting incompatible systems.	Mid-sized area
L3	Single base station	All compatible	~4	Must agree on frequencies to use. Can work for unplanned events	Limited
L2	Single base station	All compatible	~3	Small events or emergencies only	Limited
L1	Single base station	All compatible	~1	One time, small pre-planned event. Spare radios should be available	Limited

Market Strategy Group, LLC

100

Source: Motorola's Six Levels of Interoperability, SAFECOM

Slide 101



This slide provides a snapshot of the data collected during the interviews. It provides a summary of the overall costs as well as the per subscriber unit cost for the user's conventional network. In addition, it contains a listing of the organizations they are currently interoperating with (at a Level 1-2), as well as lists organizations that they would like to have interoperability with. The rating questions requesting their feedback on what are their most important elements of participating in an area-wide LMR network are also captured. Lastly, any qualitative comments regarding ALMR or experiences with their current conventional network are summarized. This format is used from slides 101-139.

Each individual agency interviewed has its own slide. However, in some instances a summary slide which combines data collected from multiple agencies within the same area was developed. For example, there is an aggregated slide for the Municipality of Anchorage. There is also a separate slide for city of Anchorage and for Municipal Light & Power. The sequence of the slides is as follows:

1. DoD
2. State Agencies
3. Local Agencies
4. Railroad
5. Non-DoD federal

Slide 102

Organizational Detail: DoD Elmendorf Air Force Base

Annual Budgets ($'000s)

O&M

Salaries & benefits	115.2
Maint. contracts	194
Rentals & leases	25
Mat & supplies	20
Outside contractors	11

Capex

Procured by US Army	

Subscriber units: 1,700
- Desktops: 61
- Mobiles: 350
- Portables: 1,289

O&M	Monthly costs per subscriber	Capex
$18		$0
	Total $18	

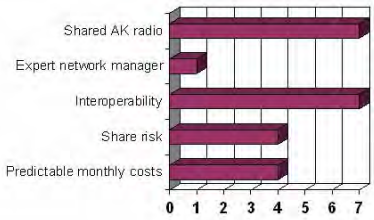
Interoperability Needs

Currently Interoperable
- Ft. Richardson

Strong Desire
- Alaska State Troopers
- Anchorage Police
- Anchorage Fire

Nice to Have
- FBI / DOJ
- DOT
- FEMA

Importance of ALMR



Key Findings / Notes

- Not interested in having an external network manager operate their network.
- Not compliant with current LMR training procedures.
- A large amount of "hidden costs" exist through the unauthorized purchase of LMR replacement parts, including: holsters, batteries, chargers, remote mounts, dual control heads, vehicle adapters.

Market Strategy Group, LLC

102

Slide 103

Organizational Detail: DoD
US Air Force – Eielson & Cope Thunder

Annual Budgets
($'000s)

O&M

Salaries & benefits	323
Maint. contracts	26
Rentals & leases	50
Mat & supplies	7
Comm. Links	21
Outside contractors	30
Training	12
Trans. Services	3
Overhead & other	8

Capex

Base Stations	20
Controllers	1
Cabling	1
Antennas	3
Transmitter sites	7.5
Microwave	22
Comm. Switch	3
Test equipment	2
Avg. add'l capex (last 10 yrs)	510

Subscriber units: 3,200
Eielson: 2,500
Cope Thunder: 150
Other: 550

Monthly costs per subscriber

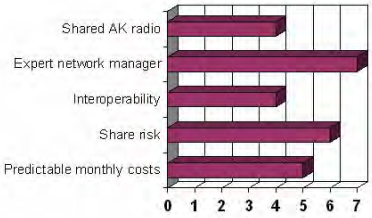
O&M $12 + Capex $15 = Total $27

Interoperability Needs

Currently Interoperable
- Alaska State Troopers
- Local police

Strong Desire
- Local police / fire departments
- Elmendorf, Clear
- Ft. Wainwright

Importance of ALMR



Key Findings / Notes

- Cope Thunder has an additional 1,600 subscriber units for exercises, and the 168th ARW has additional subscriber units for weekend use.

Market Strategy Group, LLC

103

Slide 104

Organizational Detail: DoD
US Air Force – Clear

Annual Budgets
($'000s)

O&M

Salaries & benefits	0
Maint. contracts	40[1]
Mat & supplies	3

Capex

Base Stations	3
Accessories	2.4

Subscriber units: 177
Portables: 120
Mobiles: 57

Monthly costs per subscriber

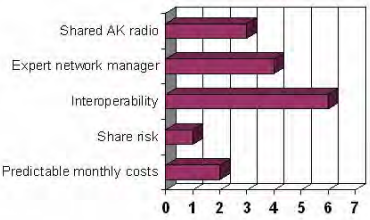
O&M $20 + Capex $3 = Total $23

Interoperability Needs

Currently Interoperable
- Alaska State Troopers
- Nenana PD
- Bureau of Land Management (State agency)

Strong Desire
- Same as above
- Office of Special Investigations

Importance of ALMR



Key Findings / Notes

- The contract is centralized through Air Force Space Command in Colorado. Confidential pricing. The above number is an MSG estimate based on contract pricing for similar levels of equipment and/or units.
- There are some dead spots with their current system; they are hoping ALMR will fix that.

Market Strategy Group, LLC

104

Slide 105

Organizational Detail: DoD US Army

Annual Budgets
($'000s)

O&M

Salaries & benefits	54.5
Maint. contracts	65.7
Rentals & leases	3.7
Mat & supplies	25.2
Comm. Links	11.6
Overhead	4.1
Transportation	19.6
Training	9.8

Capex

Base Stations	16.6
Towers	9.0

Subscriber units: 658
Mobiles: Detail not provided
Portables: Detail not provided

Monthly costs per subscriber

O&M	Capex	Total
$24	$3	$27

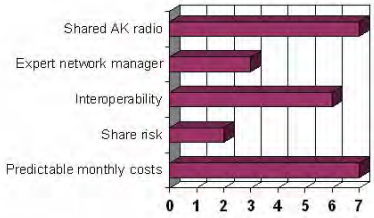
Interoperability Needs

Currently Interoperable
- State of Alaska (SOA)

Strong Desire
- Elmendorf
- Wainwright
- Greely

Nice to Have
- Eielson
- National Guard
- Air Guard

Importance of ALMR



Key Findings / Notes

- Excited about I/O possibilities.
- Job security concerns due to hiring an external network manager.
- Desires more information about ALMR technical specifications.

Market Strategy Group, LLC

105

Slide 106

Organizational Detail: DoD
Army National Guard

Annual Budgets
($'000s)

O&M		Capex	
Salaries & wages	62.5	Base stations	41.1

Subscriber units: 241

Monthly costs per subscriber

O&M	Capex	Total
$22	$14	$36

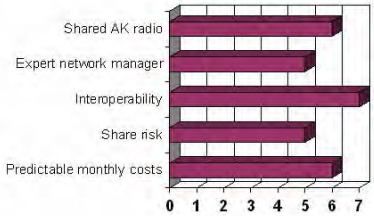
Interoperability Needs

Currently Interoperable
- Alaska State Troopers
- DoD (ALCOM)
- US Coast Guard
- DEC, DNR

Strong Desire
- Dept of Interior Wild land Fire
- Local law enforcement
- Utilities (power, pipeline)

Nice to Have
- Rural communities
- Search & rescue org.
- Other SOA departments

Importance of ALMR



Key Findings / Notes

- All cost numbers were part of DMVA numbers. Army Nat'l Guard numbers were isolated by allocating based on number of subscriber units.

Market Strategy Group, LLC

106

Slide 107

Organizational Detail: State Department of Administration (Maintains all State assets)

Annual Budgets ($'000s)

O&M

Salaries & benefits	405
Rental & Leases	150
Mat. & Supplies	80
Cellular	3
Comm. Links	50
Spectrum Planning	30
Outside Contractors	537
Overhead	100

Capex

Microwave	500

Subscriber units: 50
To calculate cost per subscriber total state subscribers (3,902) was used.

Monthly costs per subscriber

O&M: $30

Capex: $11

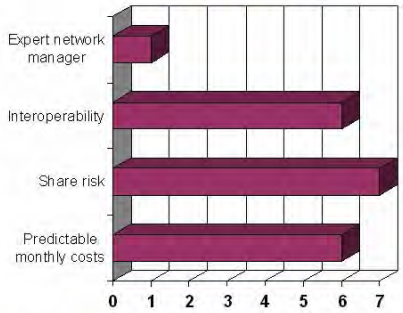
Total: $41

Interoperability Needs

Currently Interoperable
- State of AK

Strong Desire

Importance of ALMR



Key Findings / Notes

- The Dept. of Administration (DOA) manages all of the State's assets.
- It is responsible for building and Maintaining all State LMR infrastructure.
- A large majority of state subscriber unit purchases are made through the DOA.
- There is no single, accurate database for tracking State-owned subscriber units and LMR infrastructure.

Market Strategy Group, LLC

107

Slide 108

Organizational Detail: State Department of Transportation and Public Safety, Road Maintenance

Annual Budgets
($'000s)

O&M		Capex	
Salaries & benefits		Equipment	
Mat & supplies			
Cellul			
Outsi			
Overh			
Misc.			

Included in Dept. of Administration Numbers

Subscriber units: 928
Mobiles: 851
Portables: 77

Monthly costs per subscriber

Total

$41

Calculated using DOA number for all State agencies

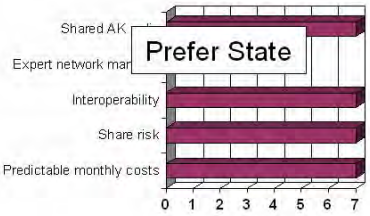
Interoperability Needs

Currently Interoperable
- Trucking Companies

Strong Desire
- Alaska State Troopers
- Alaska Railroad
- School System

Nice to Have
- Military Transport
- Bureau of Land Management
- Department of Forestry

Importance of ALMR



Key Findings / Notes

- Enthusiastic supporter of ALMR.
- Will use data capability to submit road repair reports. – could save up to $200K per year by eliminating rework due to inefficiencies in current paper-based system.
- Will not be able to maintain their current conventional system as a back-up in areas where they convert to ALMR due to channel requirements.

Market Strategy Group, LLC

108

Slide 109

Organizational Detail: State Department of Public Safety, Alaska State Troopers

Annual Budgets
($'000s)

O&M		Capex	
Salaries & benefits		Equipment	
Mat & supplies			
Cellul			
Outsid			
Overh			
Misc.			

Included in Dept. of Administration Numbers

Subscriber units: ~814
Mobiles: 407
Portables: 407

Monthly costs per subscriber

Total

$41

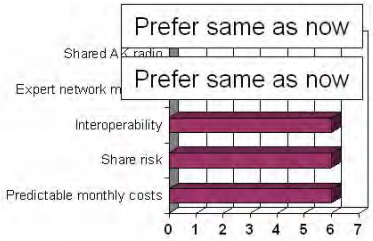
Calculated using DOA number for all State agencies

Interoperability Needs

Currently Interoperable
- Local PDs
- Coast Guard
- Local FDs

Strong Desire
- Municipality of Anchorage

Importance of ALMR



Key Findings / Notes

- Not a supporter of ALMR.
- Skeptical about the speed of P25 data capabilities.
- Does not believe ALMR will succeed in providing interoperability between AST and MOA.
- Believes ALMR will only cost more than AST's conventional systems and the AST will have to bear the increased cost on its own.
- AST has not received federal grants for [expensive] P25 subscriber equipment; local PDs do receive grants.

Market Strategy Group, LLC

109

Slide 110

Organizational Detail: State Division of Forestry

Annual Budgets
($'000s)

O&M		Capex	
Salaries & benefits		Equipment	
Mat & supplies			
Cellul			
Outsic			
Overh			
Misc.			

Included in Dept. of Administration Numbers

Subscriber units: 485
- Desktops: 15
- Mobiles: 70
- Portables: 400

Monthly costs per subscriber

Total

$41

Calculated using DOA number for all State agencies

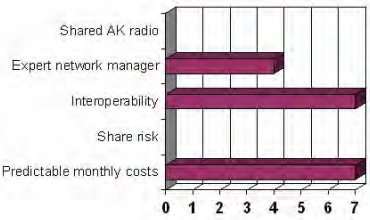
Interoperability Needs

Currently Interoperable
- Local FD
- BLM
- US Forest service

Strong Desire
- MOA
- National Guard
- EMS at Kenai, Mat-Su, and Northstar Boroughs
- Ft. Richardson

Nice to Have
- DOT
- Alyeska Pipeline

Importance of ALMR



Key Findings / Notes

- This division is tightly coordinated with BLM, which will not be on ALMR. BLM helps with fire suppression on federal lands. Forestry views BLM's absence on ALMR as a negative.
- Forestry had multiple complaints regarding ETS, including: lack of detailed billing, inadequate number of competent technicians, and timeliness of repairs.

Market Strategy Group, LLC

110

Slide 111

Organizational Detail: State Department of Military and Veterans Affairs (DMVA)

Annual Budgets
($'000s)

O&M		Capex	
Salaries & benefits		Equipment	
Mat & supplies			
Cellul			
Outsi			
Overh			
Misc.			

Included in Dept. of Administration Numbers

Subscriber units: 298
- Base Stations: 10
- Mobiles: 55
- Portables: 233

Monthly costs per subscriber

Total

$41

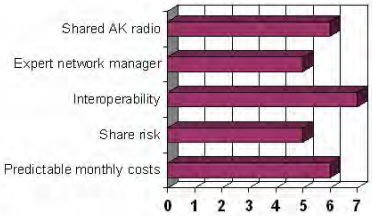
Calculated using DOA number for all State agencies

Interoperability Needs

Currently Interoperable
- Alaska State Troopers
- DoD - ALCOM/USCG
- State of Alaska Response Agencies (DEC, DNR)

Strong Desire
- Dept of Interior Wildland Fire
- Local law enforcement
- Critical infrastructure utilities (Power, Alyeska Pipeline, etc.)

Importance of ALMR

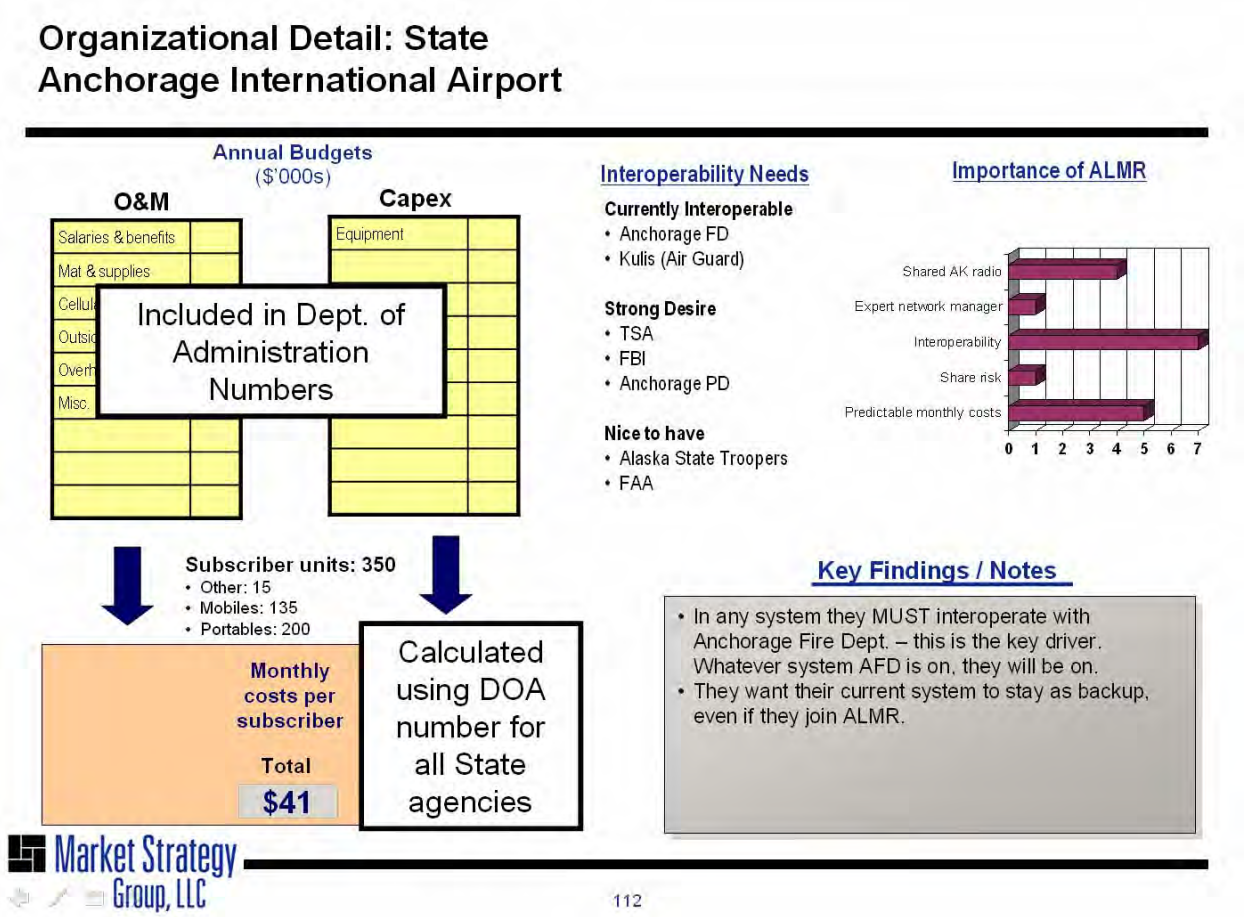


Key Findings / Notes
- ALMR interoperability will help DMVA coordinate emergency responses.
- Concerned about ALMR's impact on frequency availability and re-use.
- After Action Reviews (AAR) indicated the positive impact of ALMR.

Market Strategy Group, LLC

111

Slide 112


Organizational Detail: State
Anchorage International Airport
Annual Budgets
($'000s)
O&M
Capex
Salaries & benefits
Mat & supplies
Equipment
Misc.
Included in Dept. of Administration Numbers
Subscriber units: 350
• Other: 15
• Mobiles: 135
• Portables: 200
Monthly costs per subscriber
Total
$41
Calculated using DOA number for all State agencies
Interoperability Needs
Currently Interoperable
• Anchorage FD
• Kulis (Air Guard)
Strong Desire
• TSA
• FBI
• Anchorage PD
Nice to have
• Alaska State Troopers
• FAA
Importance of ALMR
Shared AK radio
Expert network manager
Interoperability
Share risk
Predictable monthly costs
0 1 2 3 4 5 6 7
Key Findings / Notes
• In any system they MUST interoperate with Anchorage Fire Dept. – this is the key driver. Whatever system AFD is on, they will be on.
• They want their current system to stay as backup, even if they join ALMR.
Market Strategy Group, LLC
112

Slide 113

Organizational Detail: Local Municipality of Anchorage (Combined MOA & MLP)

Annual Budgets
($'000s)

O&M

Total	1630

Capex

Total	500

Subscriber units: 3,201
- MOA: 2,700
- MLP: 501

Monthly costs per subscriber

O&M	Capex	Total
$42	$13	$55

Interoperability Needs

Currently Interoperable
- See MOA & MLP pages (next two pages)

Strong Desire
- See MOA & MLP pages (next two pages)

Importance of ALMR

See MOA & MLP pages (next)

Key Findings / Notes

- See MOA & MLP (the next two pages).

Market Strategy Group, LLC

113

Slide 114

Organizational Detail: Local Municipality of Anchorage (MOA, excluding MLP)

Annual Budgets ($'000s)

O&M

Depr. & Amor.	32
Salaries & Benefits	1040
Rental & Leases	32
Mat. & Supplies	240
Cellular	100
Outside Contractors	8

Capex

Base Stations	50
Controllers	25
Towers	75
Subscriber Units	200
Microwave	100
MDT	100
Dispatch	150

Subscriber units: 2,700
Police: 700
Fire: 200
Transit: 60
School District: 300
Gen. Gov.: 1,440

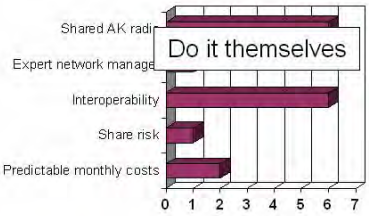
O&M	Monthly costs per subscriber	Capex
$41		$15

Total: $56

Interoperability Needs

Currently
- PD & FD from other Municipalities
- DEA
- FBI
- State Troopers
- National Guard

Importance of ALMR



Key Findings / Notes

- MOA is building its own 800MHz Trunked P25 network, independent of ALMR.
- Will have a gateway to ALMR, this will give them more seamless communications with ALMR participants
- Willing to spend more to build a network that is not dependent on the state.

Market Strategy Group, LLC

114

Slide 115

Organizational Detail: Local Municipal Light and Power (MLP) - Anchorage

Annual Budgets
($'000s)

O&M		Capex	
Depr. & Amor.	25		
Salaries & Benefits	225		
Maint., Contract	12		
Mat. & Supplies	18		
Cellular	90		
Paging	3		
Comm. Links	1.5		
Outside Contractors	25		
Overhead	28.5		

Subscriber units: 501
Electric Utility: 240
Water: 140
Solid Waste: 110
Port: 10
Merrill Field: 1

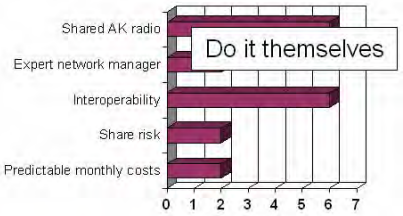
O&M	Monthly costs per subscriber	Capex
$52		$0
	Total $52	

Interoperability Needs

Currently
- Utilities (public & private)
- Surrounding FDs
- Municipality of Anchorage

Strong Desire
- Public health services
- Dept. of Forestry
- Coast Guard
- DoD
- Hospitals

Importance of ALMR



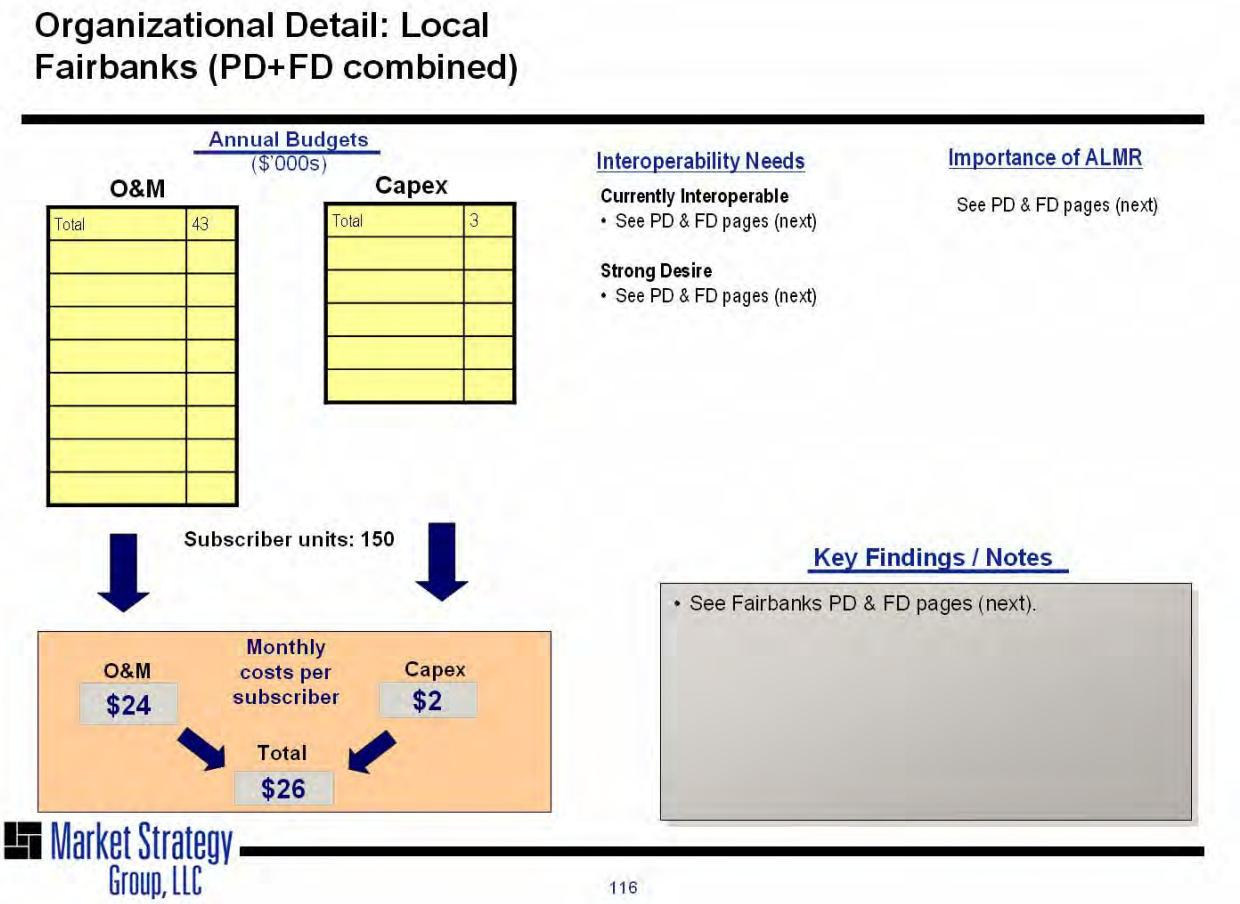
Key Findings / Notes

- MLP is on the MOA 800MHz network and they share a Maintenance shop with MOA.
- Indicated ALMR will be used on an exception basis when they move outside of their coverage area.
- Reiterated that their 800 MHz system will be their primary communications system.

Market Strategy Group, LLC

115

Slide 116


Organizational Detail: Local Fairbanks (PD+FD combined)
Annual Budgets
($'000s)
O&M
Total 43
Capex
Total 3
Subscriber units: 150
Monthly costs per subscriber
O&M
$24
Capex
$2
Total
$26
Interoperability Needs
Currently Interoperable
• See PD & FD pages (next)
Strong Desire
• See PD & FD pages (next)
Importance of ALMR
See PD & FD pages (next)
Key Findings / Notes
• See Fairbanks PD & FD pages (next).
Market Strategy Group, LLC
116

Slide 117

Organizational Detail: Local Fairbanks Police Department

Annual Budgets
($'000s)

O&M		Capex	
Salaries & wages	8		
Maintenance Contr.	17		

Subscriber units: 85
- Portables: 50
- Mobiles: 35

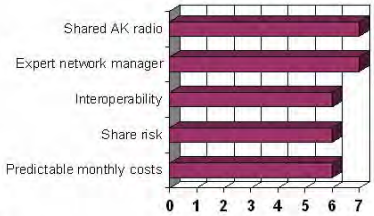
O&M	Monthly costs per subscriber	Capex
$25	Total $25	$0

Interoperability Needs

Currently Interoperable
- North Pole, other PDs
- Local fire departments
- EMS Search Rescue, Delta Rescue, State EMS

Strong Desire
- AST, UAF Police Dept, Airport Police
- UAF Fire, Chena Goldstream Fire, Ester Fire, Steese Fire, Ft. Wainwright Fire, Forestry, Eielson Fire, additional Fire mutual aids
- EMS, DOT

Importance of ALMR



Key Findings / Notes

- Some problems with their conventional systems today – they have some dead spots in North Pole, and with the noise level, they have to 'parrot' their communications, which wastes time.
- DoD interferes with their current system at the edges.
- Feels like they MUST Maintain their current system to communicate with the volunteer fire departments.
- Desperately looking for cost information from ALMR program office.

Market Strategy Group, LLC

117

Slide 118

Organizational Detail: Local Fairbanks Fire Department

Annual Budgets
($'000s)

O&M

Salaries & wages	3
Maintenance Contr.	5
Rental & leases	8
Material & supplies	1
Other	1

Capex

Base stations	3
Towers, antennas	1

Subscriber units: 65

Monthly costs per subscriber

O&M $23

Capex $4

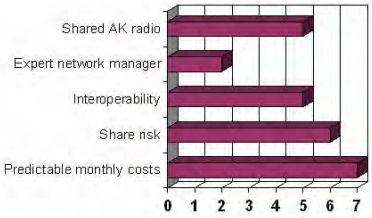
Total $27

Interoperability Needs

Currently Interoperable
- EMS (hospital)
- University FD
- Ft. Wainwright FD

Strong Desire
- Alaska State Troopers

Importance of ALMR



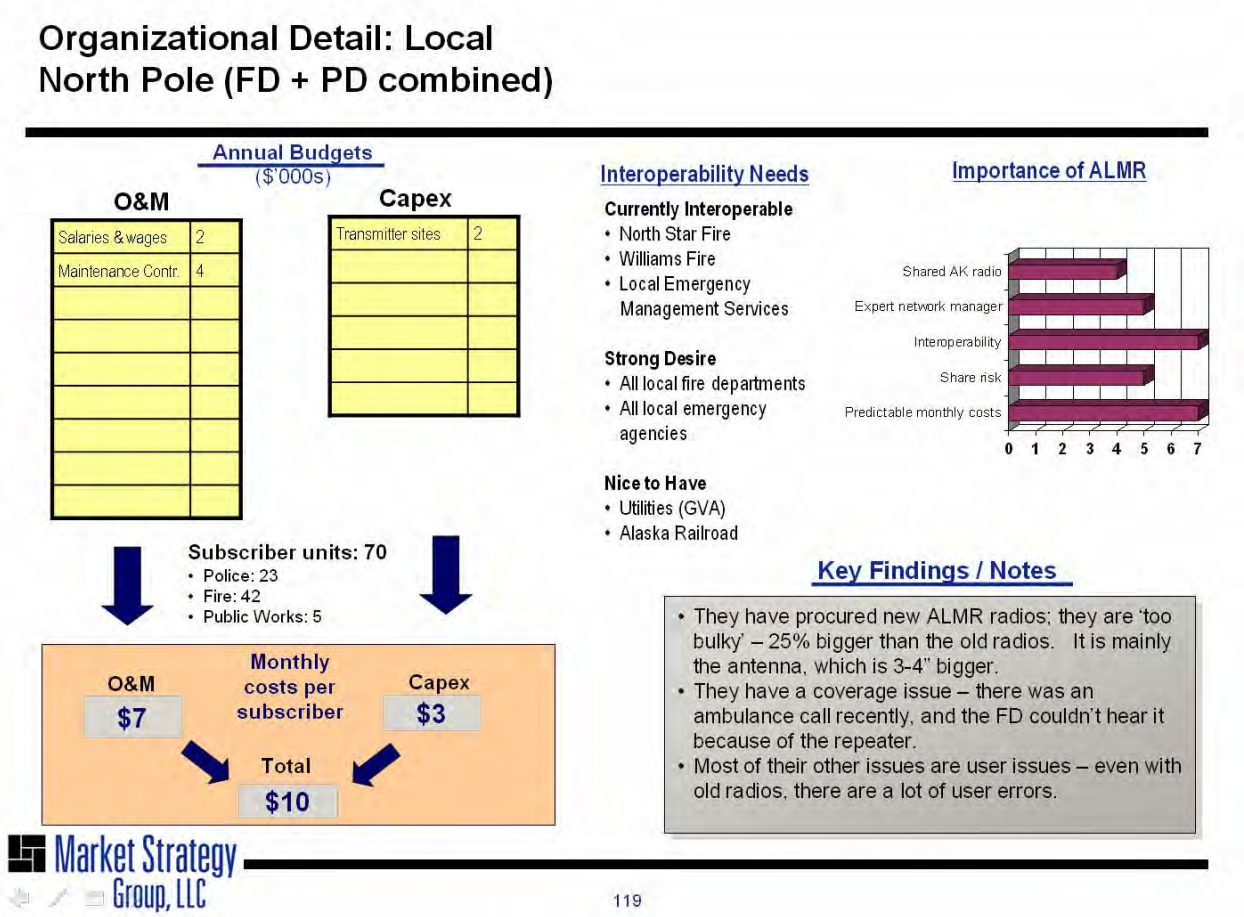
Key Findings / Notes

- They have procured new ALMR radios. They have no problems with them so far.
- The PD & FD buy their own radios; each Maintains their own sites, but they share the infrastructure.

Market Strategy Group, LLC

118

Slide 119


Organizational Detail: Local North Pole (FD + PD combined)
Annual Budgets
($'000s)
O&M
Salaries & wages 2
Maintenance Contr. 4
Capex
Transmitter sites 2
Subscriber units: 70
• Police: 23
• Fire: 42
• Public Works: 5
O&M $7
Monthly costs per subscriber
Capex $3
Total $10
Interoperability Needs
Currently Interoperable
• North Star Fire
• Williams Fire
• Local Emergency Management Services
Strong Desire
• All local fire departments
• All local emergency agencies
Nice to Have
• Utilities (GVA)
• Alaska Railroad
Importance of ALMR
Shared AK radio
Expert network manager
Interoperability
Share risk
Predictable monthly costs
0 1 2 3 4 5 6 7
Key Findings / Notes
• They have procured new ALMR radios; they are 'too bulky' – 25% bigger than the old radios. It is mainly the antenna, which is 3-4" bigger.
• They have a coverage issue – there was an ambulance call recently, and the FD couldn't hear it because of the repeater.
• Most of their other issues are user issues – even with old radios, there are a lot of user errors.
Market Strategy Group, LLC
119

Slide 120

Organizational Detail: Local
City and Borough of Juneau: Police, Fire, Roads and Airport

Annual Budgets
($'000s)

O&M

Salaries & benefits	55
Mat & supplies	10
Transportation Services	5

Capex

Equipment	50

Subscriber units: 270
Police: 75
Fire: 105
Other: 40
Airport: 50

Monthly costs per subscriber

O&M $22

Capex $15

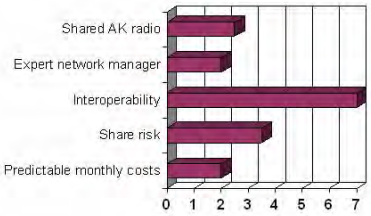
Total $37

Interoperability Needs

Strong Desire
- State Troopers
- Harbor
- Juneau Airport

Nice to Have
- DoD
- Coast Guard

Importance of ALMR



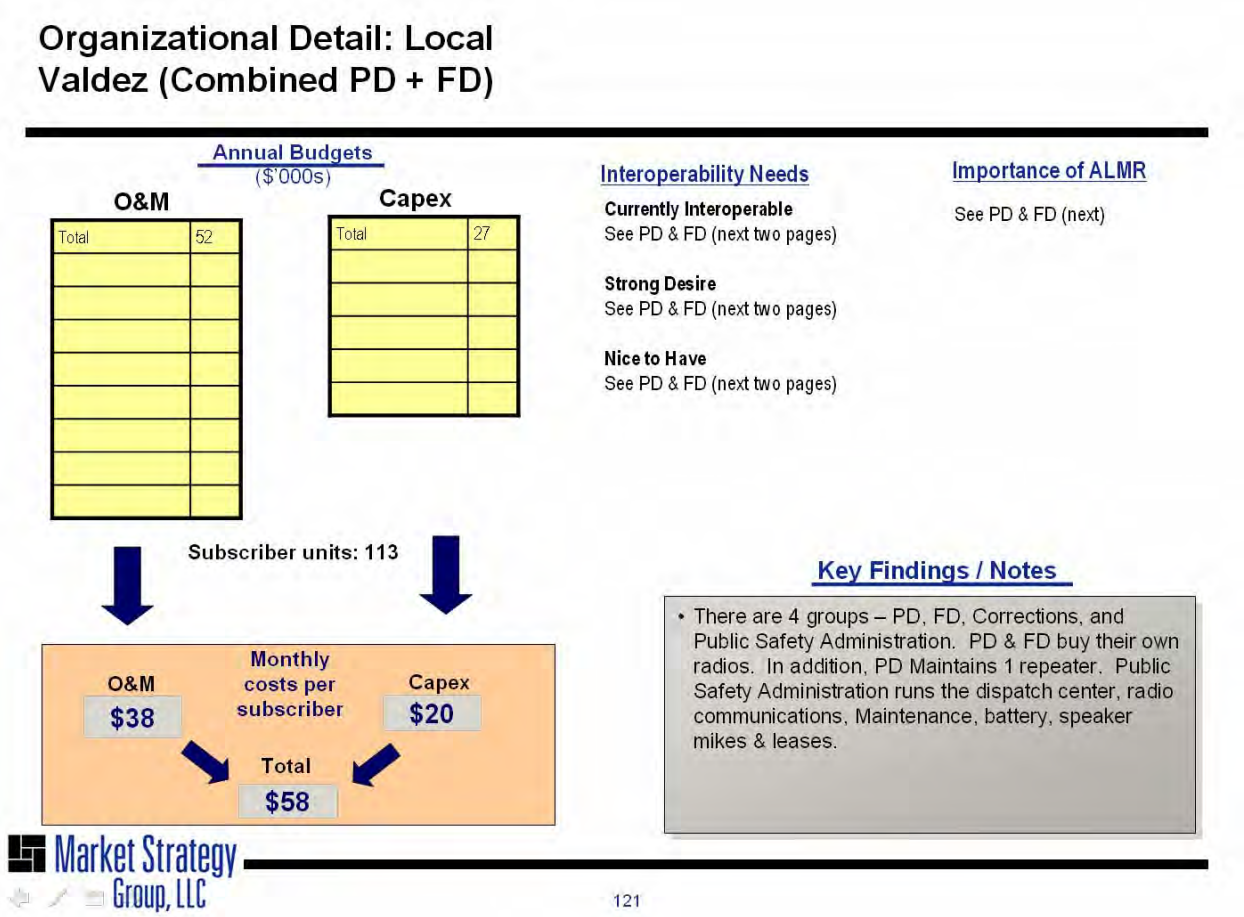
Key Findings / Notes

- Carlos Cadiente, the interviewee, runs the LMR network for Juneau, and is against joining ALMR.
- Carlos believes that ALMR will not provide coverage as good as the conventional network he built.
- Later it was discovered (from ProComm) that Carlos Cadiente owns Juneau LMR buildings, power lines and tower that he rents back to Juneau – these would likely be replaced by ALMR.

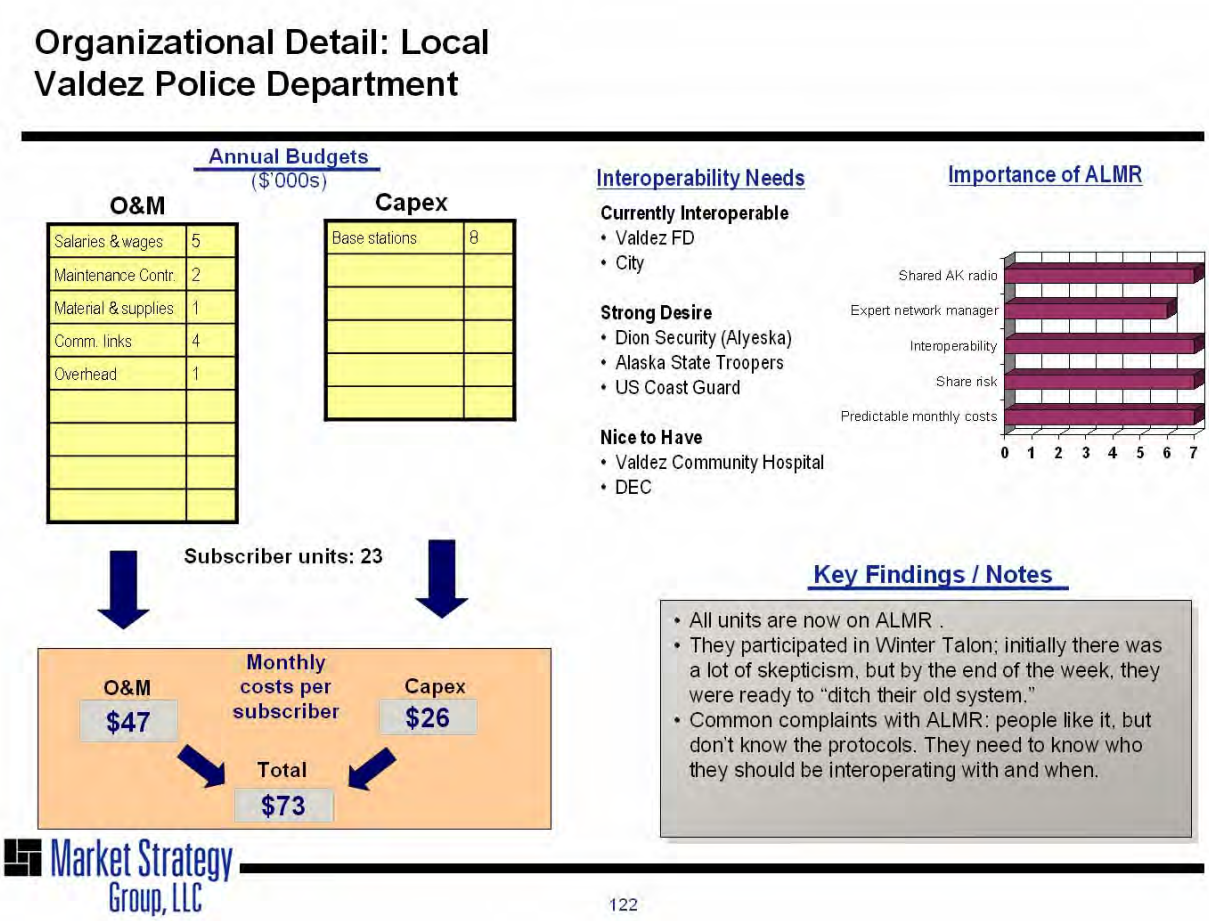
Market Strategy Group, LLC

120

Slide 121


Organizational Detail: Local Valdez (Combined PD + FD)
Annual Budgets
($'000s)
O&M
Total
52
Capex
Total
27
Subscriber units: 113
Monthly costs per subscriber
O&M
$38
Capex
$20
Total
$58
Interoperability Needs
Currently Interoperable
See PD & FD (next two pages)
Strong Desire
See PD & FD (next two pages)
Nice to Have
See PD & FD (next two pages)
Importance of ALMR
See PD & FD (next)
Key Findings / Notes
• There are 4 groups – PD, FD, Corrections, and Public Safety Administration. PD & FD buy their own radios. In addition, PD Maintains 1 repeater. Public Safety Administration runs the dispatch center, radio communications, Maintenance, battery, speaker mikes & leases.
Market Strategy Group, LLC
121

Slide 122


Organizational Detail: Local Valdez Police Department
Annual Budgets
($'000s)
O&M
Salaries & wages 5
Maintenance Contr. 2
Material & supplies 1
Comm. links 4
Overhead 1
Capex
Base stations 8
Subscriber units: 23
Monthly costs per subscriber
O&M
$47
Capex
$26
Total
$73
Interoperability Needs
Currently Interoperable
• Valdez FD
• City
Strong Desire
• Dion Security (Alyeska)
• Alaska State Troopers
• US Coast Guard
Nice to Have
• Valdez Community Hospital
• DEC
Importance of ALMR
Shared AK radio
Expert network manager
Interoperability
Share risk
Predictable monthly costs
0 1 2 3 4 5 6 7
Key Findings / Notes
• All units are now on ALMR .
• They participated in Winter Talon; initially there was a lot of skepticism, but by the end of the week, they were ready to "ditch their old system."
• Common complaints with ALMR: people like it, but don't know the protocols. They need to know who they should be interoperating with and when.
Market Strategy Group, LLC
122

Slide 123

Organizational Detail: Local Valdez Fire Department

Annual Budgets
($'000s)

O&M

Salaries & wages	0
Maintenance Contr.	37
Comm. links	2

Capex

Total	20

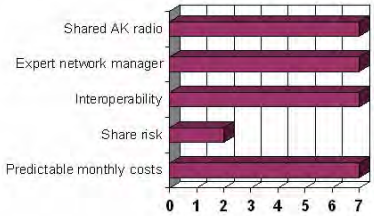
Interoperability Needs

Currently Interoperable
- US Coast Guard

Strong Desire
- AST
- AK Dept of Environmental Corrections

Nice to Have
- Alyeska Pipeline
- US Forestry Service

Importance of ALMR



Subscriber units: 90
FD: 32
Other depts.: 58

Monthly costs per subscriber

O&M	Capex	Total
$36	$19	$55

Key Findings / Notes

- The capex number is a Market Strategy Group estimate of their conventional systems' minimum annual capex costs (on average). While Valdez FD provided input of $285K last year in capex, most of this is attributable to new ALMR equipment purchases, which should not be included in conventional system costs.

Market Strategy Group, LLC

123

Slide 124

Organizational Detail: Local Nikiski Fire Department

Annual Budgets
($'000s)

O&M

Salaries & benefits	15.2
Maint. contracts	2.5
Rentals & leases	4.1
Mat & supplies	1.5
Cellular & paging	1.4
Outside contractors	6.5

Capex

Pagers	4.7

Subscriber units: 49
- Mobiles: 22
- Portables: 27

Monthly costs per subscriber

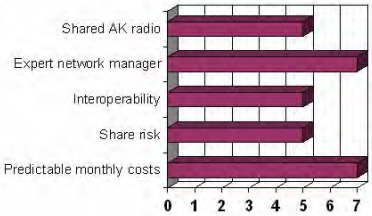
O&M	Capex	Total
$51	$8	$59

Interoperability Needs

Currently Interoperable
- Central Emergency Services
- SOA Forestry
- Two local petroleum firms
- Kenai Borough
- Alaska State Troopers

Strong Desire
- Ft. Richardson

Importance of ALMR



Key Findings / Notes

- Portable coverage is currently weak.
- Mobile coverage off the main road is not strong
- Positive about ALMR, but very concerned about Maintaining 2 systems.
- ALMR does not address paging issues.
- ALMR may not cover a large section of their region.
- Interoperability is not a crucial issue as they can currently communicate with their key partners.

Market Strategy Group, LLC

124

Slide 125

Organizational Detail: Local Homer

Annual Budgets ($'000s)

O&M

Salaries & wages	11
Maintenance Contr.	17
Cellular	2.2

Capex

Total	32

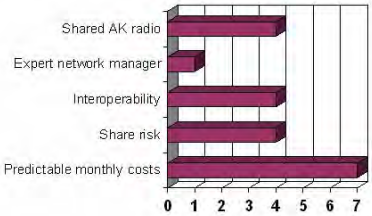
Interoperability Needs

Currently Interoperable
- AST
- Alaska State Parks
- Alaska State Forestry

Strong Desire
- Anchor Point FD
- Kenai Police
- Soldotna Police

Nice to Have
- US Coast Guard
- Local Air services

Importance of ALMR



Subscriber units: 90
Police: 22
Fire: 44
Public Works: 16
Harbor: 8

Monthly costs per subscriber

O&M	Capex	Total
$28	$29	$57

Key Findings / Notes

- The capex total is based on an annualized figure. The PD bought $190K of equipment 8 years ago; so an annualized figure is $190K/8, or $24K. In addition, the FD has an annual capex of $8K.
- Each department buys their own handsets. The police pays for the infrastructure. The city handles finance, accounting, etc.
- Still working on bugs in the new system. Looking for coverage maps for ALMR.

Market Strategy Group, LLC

125

Slide 126

Organizational Detail: Local Seward

Annual Budgets
($'000s)

O&M

Salaries & wages	97
Outside contractors	5
Overhead	7
Shipping	1

Capex

Base stations	5
Antennas	1
Wireless system	2

Subscriber units: 112
Police: 18
Fire: 30
Public Works: 26
Electric: 15
Harbor: 10
Administration: 13

Monthly costs per subscriber

O&M	Capex	Total
$94	$6	$100

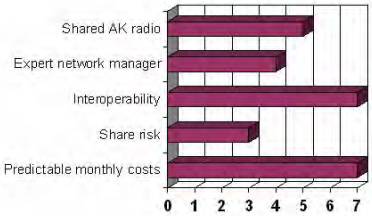
Interoperability Needs

Currently Interoperable
- City departments
- Public safety (AST)
- Forest services & park service

Strong Desire
- AST
- Kenai peninsula borough
- MOA

Nice to Have
- Dept of Veterans Affairs
- Alaska Railroad

Importance of ALMR



Key Findings / Notes

- Departments purchase their own, but most radios routed through fire department. No Maintenance contracts.
- 4 ALMR base stations and 1 mobile just went in operation in Dec 2004. There was a problem with it, but it might have been operational. (Hearing the dispatcher). Simplex issue.
- "A lot of unanswered questions with ALMR". Looking for multiple levels of membership of ALMR.

Market Strategy Group, LLC

126

Slide 127

Organizational Detail: Local Kenai Fire Department

Annual Budgets ($'000s)

O&M

Salaries & benefits	25.6
Maint. contracts	0.6
Cellular	24
Outside contractors	9.6

Capex

Equipment	27

Subscriber units: 65
- Mobiles: 35
- Portables: 26
- Desktops: 4

Monthly costs per subscriber

O&M	Capex	Total
$61	$35	$96

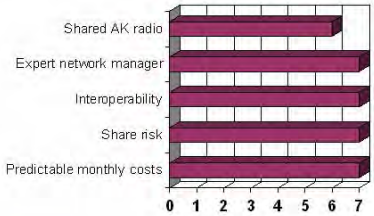
Interoperability Needs

Currently Interoperable
- Forestry
- State Troopers
- CES
- All borough airports
- Nikiski FD

Strong Desire
- DoD
- Coast Guard
- APD

Nice to Have
- TSA
- FBI
- Search & Rescue

Importance of ALMR



Key Findings / Notes

- Already started procuring ALMR compliant subscriber units.
- Eager to join, but concerned over cost.
- Very excited about building regional connectivity.

Market Strategy Group, LLC

127

Slide 128

Organizational Detail: Local Kenai Police Department

Annual Budgets
($'000s)

O&M

Salaries & benefits	20.6
Maint. contracts	11.6
Outside contractors	1.1

Capex

Antennas	14
Repeaters	10
Transmitter Sites	5

Subscriber units: 52
- Mobiles: 31
- Portables: 21

Monthly costs per subscriber

O&M	Capex	Total
$53	$46	$99

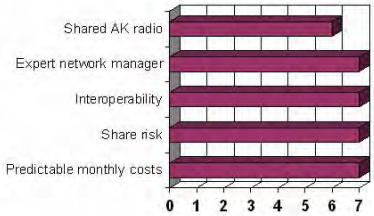
Interoperability Needs

Currently Interoperable
- State troopers
- Mutual Aid Departments
- Division of Forestry

Strong Desire
- Borough-wide Emergency Operations Center
- State EOC
- Ft. Richardson

Nice to Have
- Local law enforcements
- Local fire departments
- Coast Guard, Air Guard
- Search & Rescue

Importance of ALMR



Key Findings / Notes

- Interested in ALMR but concerned about cost and coverage issues.
- Desires a very strong regional network to tie the peninsula to Fort Richardson.
- Very interested in expanding their dispatch operations.

Market Strategy Group, LLC

128

Slide 129

Organizational Detail: Local Kenai Borough Emergency Services

Annual Budgets ($'000s)

O&M

Maint. contracts	65
Transportation	3.3

Capex

Equipment	30

Subscriber units: 39
- Mobiles: 12
- Portables: 27

Monthly costs per subscriber

O&M	Capex	Total
$146	$64	$210

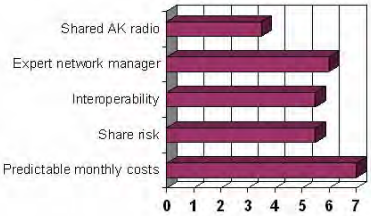
Interoperability Needs

Currently Interoperable
- Local PD/FD
- Volunteer FD
- Fish & Wildlife, Fire Response

Strong Desire
- Anchorage EOC
- Ft. Richardson
- State Emergency Response Center Ft. Richardson

Nice to Have
- Coast Guard – Oil Spill Rescue
- BLM – Fire control agency

Importance of ALMR



Key Findings / Notes

- Have already received DHS grant money to procure ALMR-compliant equipment, but have procured any due to uncertainty of the network build-out.
- Desires "reliable coverage at a reasonable cost."
- Their focus is on borough-wide coverage, not interoperability.

Market Strategy Group, LLC

129

Slide 130

Organizational Detail: Local Kenai EMS

Annual Budgets
($'000s)

O&M

Salaries & benefits	4.3
Maint. contracts	12.9
Rentals & leases	2.1
Cellular	3.9
Outside contractors	5.0

Capex

Antennas	2.1
Other	16.0

Subscriber units: 90
- Mobiles: 30
- Handhelds: 60

Monthly costs per subscriber

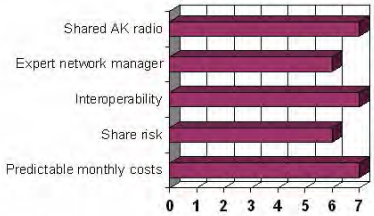
O&M	Capex	Total
$22	$17	$39

Interoperability Needs

Currently Interoperable
- State Forestry
- Soldotna Police
- AST

Strong Desire
- State Forestry/BLM
- Central Peninsula General Hospital
- Soldotna Police & AST

Importance of ALMR



Key Findings / Notes

- Very positive about ALMR.
- Interoperability is important, but expanded coverage especially into remote areas is even more crucial.

Market Strategy Group, LLC

130

Slide 131

Organizational Detail: Local Palmer Police Department

Annual Budgets
($'000s)

O&M

Salaries & benefits	36
Maint. contracts	8
Mat & supplies	7
Cellular	4.2
Outside contractors	4
Training	4.5
Overhead	6.2

Capex

Repeaters	27

Subscriber units: 145
- Mobiles: Detail not provided
- Portables: Detail not provided

Monthly costs per subscriber

O&M	Capex	Total
$36	$15	$51

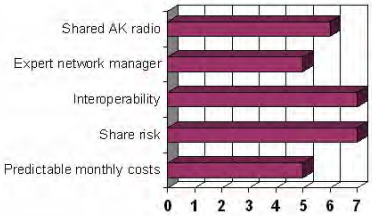
Interoperability Needs

Currently Interoperable
- Mat-Su Borough
- Wasilla
- State Troopers, Forestry, Animal Control, DOC

Strong Desire
- APD
- DOT

Nice to Have
- FBI
- ATF
- Secret Service

Importance of ALMR



Key Findings / Notes

- Have secured funding for ALMR-compliant subscriber units through DHS grants.
- Strongly desires connectivity with the Anchorage PD, but is concerned about issues with their 800 MHz network. Desires access to their criminal database.

Market Strategy Group, LLC

131

Slide 132

Organizational Detail: Local Soldotna Police Department

Annual Budgets
($'000s)

O&M

Salaries & benefits	1.8
Mat & supplies	4.5
Cellular	3.9

Capex

Base Stations	5.8

Subscriber units: 26
- Mobiles: 13
- Portables: 13

Monthly costs per subscriber

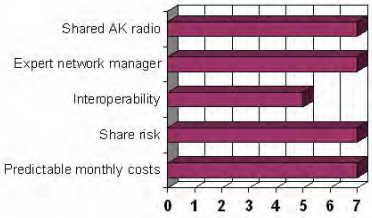
O&M	Capex	Total
$26	$19	$45

Interoperability Needs

Currently Interoperable
- State troopers
- Kenai PD
- CSE, multiple local PDs, local Public Works

Strong Desire
- None noted

Importance of ALMR



Key Findings / Notes

- Focus is on network reliability.
- Interoperability is not that important. The key is regional interoperability, which Soldotna currently possesses.
- "Cost containment" is crucial to joining a new system.

Market Strategy Group, LLC

132

Slide 133

Organizational Detail: Local
Mat-Su Borough Emergency Services

Annual Budgets
($'000s)

O&M

Salaries	7
Maint. contracts	96.5
Rentals & leases	35
Cellular	68.9
Employee Benefits	2.5

Capex

Cabling	4
Repeaters	56

Subscriber units: 544
- Mobiles: 160
- Portables: 380
- Desktops: 4

Monthly costs per subscriber

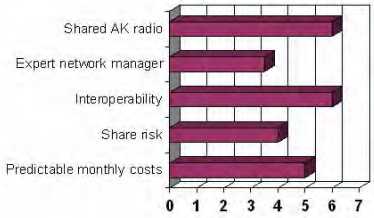
O&M	Capex	Total
$32	$9	$41

Interoperability Needs

Currently Interoperable
- State Parks
- State Troopers
- All PD's and FDs; Div. of Forestry, Fish & Game

Strong Desire
- FBI
- Coast Guard
- APD

Importance of ALMR



Key Findings / Notes

- Is very concerned about working with external vendors due to previous performance-based issues.
- Likes the ALMR concept. Coverage and cost are the key drivers.
- Priority is "filling-in dead spots within the borough. Currently 15%-20% of the borough along the roadways is not covered."

Market Strategy Group, LLC

133

Slide 134

Organizational Detail: Local Wasilla Police Department

Annual Budgets ($'000s)

O&M

Salaries & benefits	86
Mat & supplies	11.9
Cellular & paging	6.4
Outside contractors	22.5
Overhead	25.6
Misc.	7.1

Capex

Equipment	25

Subscriber units: 55
Mobiles: 19
Portables: 32
Desktops: 4

Monthly costs per subscriber

O&M	Capex	Total
$116	$38	$154

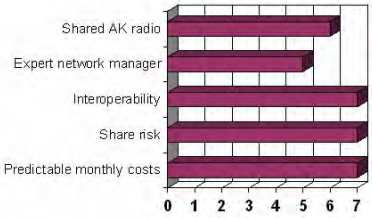
Interoperability Needs

Currently Interoperable
- State troopers
- Houston PD
- Alaska State Parks

Strong Desire
- Mat-Su Borough (Fire & EMS)
- DOC
- APD

Nice to Have
- AKRR
- DOT
- Homeland Security

Importance of ALMR



Key Findings / Notes

- Cost is biggest concern with joining ALMR.
- Currently expanding their dispatch operations, and are unsure how this will integrate with ALMR.
- Recently conducted an engineering study focused on how to improve coverage within their existing region.

Market Strategy Group, LLC

134

Slide 135

Organizational Detail: Local Town of Whittier

Annual Budgets
($'000s)

O&M		Capex	
Maint. Contracts	8	Total	1

Subscriber units: 37
Mobiles: 12
Portables: 25

O&M	Monthly costs per subscriber	Capex
$18		$2
	Total $20	

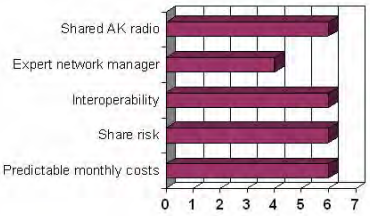
Interoperability Needs

Currently
- State Troopers
- Coast Guard
- State EMS

Strong Desire
- JTTF
- FBI

Nice to have
- Anchorage PD

Importance of ALMR



Key Findings / Notes

- Did not interview on-site. Whittier emailed a completed survey.
- Considering building a new system for their area.

Market Strategy Group, LLC

135

Slide 136

Organizational Detail: Railroad
Alaska Railroad

Annual Budgets
($'000s)

O&M

Salaries & benefits	310
Rental & Leases	2
Mat & supplies	50
Cellular	30
Spectrum Planning	5
Overhead	25
Transportation Serv.	15
Travel	2.5

Capex

Base Stations	25
Controllers	2.5
Towers	50
Microwave	250

Subscriber units: 900

O&M	Monthly costs per subscriber	Capex
$39		$30
	Total $69	

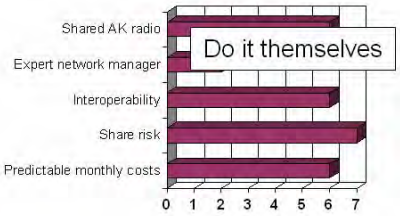
Interoperability Needs

Currently
- State Troopers
- Police Departments
- Fire Departments
- DOT
- DEC

Strong Desire
- DoD
- Ports
- Coast Guard

Nice to Have
- Utilities

Importance of ALMR



Key Findings / Notes

- Supporter of ALMR – want better interoperability.
- The railroad is not confident state will continue to support ALMR -- the railroad has constructed contingency plans.
- Do not expect cost savings – the railroad Maintains 3 redundant radio systems to ensure that the trains can always run, because if they completely lose radio communications, all trains would shut down.
- Currently, no railroad-hardened P25-compatible radios exist – Motorola says they will manufacture them in the future.

Market Strategy Group, LLC

136

Slide 137

Organizational Detail: Non-DoD Federal Transportation Security Administration (TSA)

Annual Budgets
($'000s)

	O&M	Capex
Cellular	48	

Subscriber units: 20

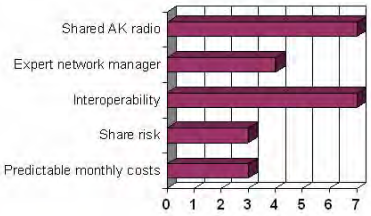
O&M	Monthly costs per subscriber	Capex
$20		$0
	Total $20	

Interoperability Needs

Currently
- State of AK
- FAA
- FBI
- NORAD/ALCOM (DoD)

Strong Desire
- Coast Guard
- Customs
- Locals

Importance of ALMR



Key Findings / Notes

- Support of ALMR – interoperability and rapid communication in an emergency -- are essential needs for TSA.
- Washington D.C. takes care of all TSA O&M needs, therefore cost is not an issue for TSA.

Market Strategy Group, LLC

137

Slide 138

Organizational Detail: Non DoD Federal
US Fish and Wildlife

Annual Budgets
($'000s)

O&M

Salaries	87.9
Maint. contracts	67
Employee Benefits	30.7
Overhead	5

Capex

Base Stations	60
Transmitter Sites	50

Subscriber units: 488
- Mobiles: 161
- Portables: 327

Monthly costs per subscriber

O&M	Capex	Total
$32	$19	$51

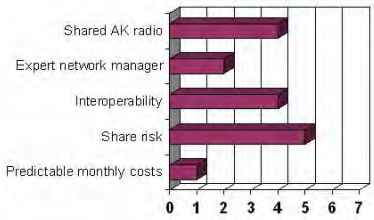
Interoperability Needs

Currently Interoperable
- State Division of Forestry
- State Guard
- State Fish & Wildlife

Strong Desire
- AST
- Local FD/PD

Nice to Have
- Civil Air Patrol

Importance of ALMR



Key Findings / Notes

- Intend to continuing using their current conventional system.
- High level buy-in from senior level managers will be required prior to committing to ALMR.
- Desire to use ALMR's mutual aid channel to assist in disaster response.

Market Strategy Group, LLC

138

Slide 139

Organizational Detail: Non-DoD Federal
National Park Service

Annual Budgets
($'000s)

O&M		Capex	
Salaries	161.5		
Rentals & leases	7		
Mat & supplies	50		
Employee Benefits	56.5		
Overhead	5		

Subscriber units: 705
- Mobiles: 70
- Portables: 635

Monthly costs per subscriber

O&M	Capex	Total
$33	$0	$33

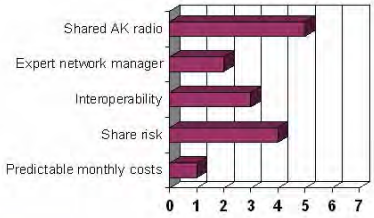
Interoperability Needs

Currently Interoperable
- None

Strong Desire
- AST
- Local PD/FD

Nice to Have
- Civil Air Patrol

Importance of ALMR



Key Findings / Notes

- Intend to continuing using their current conventional system.
- Very skeptical that an external vendor can expertly manage the network.
- Desires communication links with Alaska Disaster Group and FEMA.

Market Strategy Group, LLC

139

Slide 140

Contract Details

- This report is delivered to the Department of Defense pursuant to a delivery order under the ANSWER contract initiated by Information Systems Support, Inc. (ISS). Market Strategy Group is a certified subcontractor to ISS.

Slide 141

Contact Information

Tim Woodall
ALMR Program Management Office
Timothy.Woodall@ELMENDORF.af.mil
907.552.8223

Spencer Stern
Partner, Market Strategy Group
spencer.stern@mkt-strat.com
773.965.1650

Market Strategy Group, LLC

141