

INSTREAM PIT ARRAY COMMUNICATIONS - TYPES, SCHEMES, AND LESSONS LEARNED



KYLE MEIER - MERCK ANIMAL HEALTH - BIOMARK

THE NEED

- TO COLLECT IPTDS DATA CONSISTENTLY
- TO PROVIDE DATA TO COLLABORATORS QUICKLY
- TO PLAN EFFECTIVE MAINTENANCE
- TO REDUCE DATA ERRORS
- TO REDUCE COSTS
- TO SIMPLIFY DATA FOR EMERGING REGIONS

MANUAL DATA COLLECTION COSTS

COMPETENT TECHNICIAN

- FULLY LOADED RATE \$65/HOUR

WEEKLY SITE VISIT TO ONE LOCATION (45-WEEKS PER YEAR)

30-MINUTES FROM WORK CENTER (1-HOUR ROUND-TRIP)

30-MINUTES ON-SITE

30-MINUTES TO PARSE AND UPLOAD DATA

2-HOURS PER WEEK = **\$5850 LABOR ANNUALLY**

REMOTE DATA COLLECTION COSTS

HARDWARE

- 4G CELLULAR MODEM KIT \$800
- SATELLITE MODEM KIT \$2,000

MONTHLY BIOMARK BIOLOGIC SERVICE WITH PTAGIS UPLOAD

- 4G BIOLOGIC SERVICE \$165
- BGAN BIOLOGIC SERVICE \$295

MOST EXPENSIVE CASE

- SATELLITE MODEM AND SERVICE = **\$5,540 FIRST YEAR**
\$3,540 PER YEAR AFTER HARDWARE

COSTS ABOVE ARE BIOMARK 2024 RETAIL



THE EQUIPMENT

CELLULAR

- NUMEROUS DEVICE TYPES
 - 3G IS GONE!
 - 4G IS EXPANDING
 - 5G IS UNNECESSARY FOR OUR DATA NEEDS AND LOCATIONS
- CLOUDGATE 4G WW IS OUR MODEM OF CHOICE

SATELLITE

- LIMITED DEVICE TYPES
 - HIGH LATENCY
 - LOW DATA FOR THE COST
 - STARLINK?
- HUGHES 9502 BGAN TERMINAL IS OUR MODEM OF CHOICE.

HARDWIRED

- USE IT IF YOU GOT IT!
 - TYPICALLY MORE CONFIGURATION REQ



DEPLOYMENT SCHEMES

SINGLE SITE

- ONE MODEM/ROUTER
- ONE IPTDS OF ANY CONFIGURATION

MULTIPLE SITES WITHIN CABLE RANGE

- ONE MODEM/ROUTER
- ETHERNET SWITCH
- MULTIPLE IPTDS WITHIN 100M OF UPLINK

MULTIPLE SITES OUTSIDE OF CABLE RANGE

- ONE MODEM/ROUTER
- POWER-OVER-ETHERNET INJECTOR
- POINT-TO-POINT OR POINT-TO-MULTIPOINT RADIOS AT EACH IPTDS

DO I CALL YOU OR DO YOU CALL ME?

- BOTH METHODS HAVE MERIT
- CALLING A SITE REQUIRES AN ADDRESS
- CALLING FROM A SITE REQUIRES ANOTHER DEVICE TO INITIATE THE CONNECTION

LESSONS LEARNED

- SHUT THE DOOR!
- SEARCH FOR THE VALUE
- EXPERTS ARE HARD TO COME BY
- AGENCY, UTILITY, AND TRIBAL IT-DEPARTMENTS AREN'T TOO KEEN TO MANAGE REMOTE NETWORKS ON SOME OBSCURE DEVICE
- FIND EFFICIENCIES AND COST SAVINGS
- PUT THESE DEVICES BEHIND A VPN

INSTREAM PIT ARRAY COMMUNICATIONS –

THANKS! QUESTIONS?



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