iNOC Outsourced Network Management Proposal for TacDoh

iNOC's proposal to manage and support TacDoh's network infrastructure meets the following two requirements:

1. Maintain or improve current levels of service
2. Reduce costs by about 30%. iNOC estimates that TacDoh's savings as a result of this outsourcing arrangement is as follows:

Year 1	$261,499
Year 2	$327,200
Year 3	$327,200

This will allow TacDoh IT staff to focus its resources on SFT application development and other applications that support the business directly.

iNOC's responses to the RFI requirements are below along with additional comments and scenarios. iNOC proposes its **iMonitor** Network Management service for TacDoh.

I.B. Instructions

iNOC meets the minimum requirements of the RFI:

_X_ LAN and WAN network management
_X_ Onsite support as needed or through a third party
_X_ SLM with reporting and billing adjustments for violated thresholds

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II. Business Scenario

1. Network Management Costs: iNOC's iMonitor Service

iNOC is confident of the value of the iMonitor service to TacDoh. To demonstrate this, iNOC will not charge TacDoh a financial penalty for cancellation during the first three months of service, allowing TacDoh to evaluate the service.

Setup cost (one-time)	$45,800
Monthly recurring cost (MRC)	$45,800
Frame management network (2 + 6 circuits), per month	$2100
Contract length	3 Years
Direct conversion costs (required) to iNOC's iMonitor service -Baselining and application flow analysis -TacDoh Mixer integration	$20,000
Conversion costs from iNOC's iMonitor to in-house/another provider	Frame management network termination costs + re-training costs[1]
Financial penalty for early termination **(No penalty if cancelled during first three months of service)**	See Note 2 below

Notes

1. TacDoh has the option of licensing iNOC's tools and process knowledge for a flat price of $120,000 per year.
2. Cancellation penalties are as below:

Cancelled during first year of service	*Pay difference between 3-year rate and 1-year rate ($57,250) for the first year*
Cancelled during second year of service	*Pay difference between 3-year rate and 2-year rate ($52,670) for the first two years*
Cancelled during third year of service	*Pay 70% of remaining contract value*

Frame Management Network

iNOC will install, configure and manage Frame Relay connections between TacDoh's three warehouse locations and each of iNOC's two Network Operation Centers. This allows both iNOC's primary and backup NOCs to have continuous access to TacDoh's network. The cost for this is estimated to be $2100 per month. iNOC will supply the equipment needed to terminate these circuits as part of the setup fee.

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Collection Agents

iNOC will install a pair of iMonitor Collection Agents at each of the three warehouse locations. These redundant Collection Agents are designed to provide higher redundancy of the management network/function and reduce the bandwidth needed for the management Frame circuits.

Reimbursement Procedures

Below is a sample reimbursement method and billing adjustments for the SLA for Network Availability of 99.9%.

Parameter	**Measurement & Interval**	**Remediation Criteria**	**Remedial Response if exceeded (with respect to affected Networks/Devices)**
Network Availability (Minimum Requirement)	99.9%	Failure to meet in a month	Reduce monthly payment by 10% for month in which level is exceeded
		Failure to meet in any two months in a 4 month period	Reduce monthly payment by 20% for months in which level is exceeded
		Failure to meet in any three months in a 6 month period	Reduce monthly payment by 30% for months in which level is exceeded
		Failure to meet for more than three months in a 6 month period	Reduce monthly payment by 40% for months in which level is exceeded. Option to cancel contract with 30 days notice

Similar SLA remedies are available for other SLA parameters such as:

- Management Frame network availability
- Response times
- Escalations
- Average user telephone hold times\
- Web site availability

2. The iMonitor service includes the following as part of the standard service.

1. Configuration changes
2. 24 hour/7 day monitoring and notification
3. Trouble-ticket creation and management

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4. Monthly reports on trouble tickets and service measure items such as percentage downtime, number of outages, the longest and shortest outage, MTBF (mean time between failure) and MTTR (mean time to repair)
5. Web access to network traffic trend data and reports
6. SLA statistics
7. Remote trouble-shooting, diagnostics and fault isolation
8. On-site support through iNOC and third-party network engineers

3. By outsourcing Network Management to iNOC, TacDoh can re-deploy or eliminate the following resources and costs:

1 Data center staff ($30,000)
1 LAN server/desktop support staff ($50,000)
3 Network engineers ($195,000)
4 Network operations staff ($120,000)
1 Manager ($65,000)
6 Help-desk staff ($180,000)
1 IT Management staff ($85,000)
Company overhead estimated at 20%

Total reduction in staff	17
Cost reduction	$870,000 per year

4. iMonitor will maintain service levels of 99.9% at the retail stores for all devices and network infrastructure for problems that can be resolved remotely. Response time for problems that require on-site support is two hours. Circuit problems are dependent on the WAN service provider response times for problem resolution and will be coordinated by iNOC.

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6. The iNOC Network Team, with TacDoh's help, will document current application flows (at the network and transport layers) for all the critical applications being used. This will aid the iNOC team in communicating with TacDoh's systems and applications staff when problems or questions arise.

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Central to network problem solving and planning is baselining – the process of analyzing network usage and traffic. iNOC will develop the baseline for TacDoh's LAN and WAN by collecting data over a one-month period.

By analyzing trending reports from iMonitor and from data collected by Adtran N-Form, iNOC can track the bandwidth utilization of each application and circuit. By combining this with throughput data collected from the network devices, iNOC can analyze and track potential locations in the network where performance may be affected in the future. With an understanding of the application flows and the network baseline, iNOC can ensure key applications are getting the required bandwidth. This information will also help iNOC understand and respond to network infrastructure or traffic pattern changes very effectively.

With this methodology, iNOC will ensure all transactions take less than 5 seconds, network transit times are under 2 seconds, and all circuits and systems operate within these parameters 99.9% of the time.

iNOC will charge TacDoh, a $12,000 one-time fee for establishing the network baseline and documenting the application flows.

7. iMonitor will manage and support the entire network infrastructure at each of the retail stores. This includes:

- POS servers and terminals
- Ethernet switches
- Wireless access points
- WAN CPE
- WAN circuit(s)

It is assumed that the POS servers and terminals have a standard configuration across all 300 retail stores. TacDoh will need to provide spares for all equipment, which will be housed at geographically appropriate iNOC equipment facilities (through third-party, except in Chicago area). The number of spares for each type of equipment will be determined based on historic problem and failure rate statistics provided by TacDoh.

While not required, iNOC recommends installing terminal servers at each of the 300 retail stores. This will give iNOC access to all the equipment through serial/console ports, which aids in resolving equipment problems effectively. An analog modem line is also recommended so all equipment can be accessed by iNOC out-of-band at any time.

Costs for this capability are given below for each retail store:

8-Port Terminal Server with Modem	$1200
Analog Line	$17-$23 per Month

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At the three warehouses and the Data Center, iNOC recommends a similar setup with terminal servers and analog modem lines for out-of-band access to network equipment. Multiple terminal servers may be needed for each warehouse and the Data Center. iNOC recommends building an out-of-band Ethernet network at each warehouse and the Data Center if possible to locate these terminal servers. With a single analog modem line, iNOC can then access all network equipment. The costs for building this out-of-band network at each warehouse location and the Data Center will be dependent on equipment location and the cable plant. It is estimated that such a network at each warehouse location and the Data Center would cost from $8,000 to $15,000.

8. Auto-dial backup using either ISDN or analog lines can be accomplished by appropriately configuring the Cisco routers. Several mechanisms are used by iNOC's NOC to determine such an event:

- SNMP trap logs
- Polling (SNMP and IP)
- Syslogs

These event notification mechanisms along with appropriate Cisco configurations will help the NOC switch back to the dedicated circuit within five minutes of service restoration.

Specific Requirements

Reporting

iMonitor reporting is extensive and is customizable. Reporting features include the following:

- Reports are accessible via a secure web browser after proper authentication.
- Access is customizable and can be delegated. Access to reports can be based on device, location (retail store, warehouse, or Data Center), user, and type of report (e.g., specific service reports, summary management reports, etc.). An online web form is available for TacDoh to define and customize access for each user and user group.
- Ad hoc report creation using iMonitor's dynamic reporting tools available over the web. All reports are based on collected network statistics as well as data from iMonitor's Trouble Ticket system. Reports can be run any time and stored for later viewing or local printing.

iNOC can have standard reports generated and available on-line at regular pre-set intervals. These standard reports need to be defined by TacDoh. Using several forms of data as input (SNMP, RMON, NetFlow), iMonitor can provide reports for Top 10 Applications, TopN Talkers, Utilization, Errors, Throughput and Availability. Additionally, reports can include

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historical averages, minimums, maximums, and 95 percentile overlays. Reports can also include MTTRs and MTBRs. iNOC will use Adtran N-Form as well as NetFlow to collect application transaction data.

All reporting features are available as part of the standard iMonitor solution.

Sales Tracking Integration

With an understanding of the TacDoh Mixer input data format requirements in detail, iNOC can develop an XML interface for the data feed. Based on the listed data requirements of the TacDoh Mixer application, iNOC's estimate of the additional cost for this functionality is $8000. There is no recurring charge for this service.

SLA Reporting

iMonitor service includes detailed SLA reporting as part of its standard service. Since these SLA reports are based on gathered network statistics and data collected in the iMonitor Trouble Ticket system, they are highly accurate. iNOC coordinates all circuit related issues (problems, troubleshooting, etc.) with the WAN providers on TachDoh's behalf. Web-based dynamic real-time reports are available for SLA performance monitoring.

Circuit Billing

iNOC will provide provisioning and billing audit services for WAN circuits at the following rates:

New circuit provisioning	$600 per circuit (one-time charge, includes equipment configuration)
Billing audits	$10 per circuit per month

Performance Metrics

All performance metrics listed are available from the iMonitor system. All data collected is saved in five-minute samples and rolled up to weekly, monthly and quarterly summaries. All this data can be accessed in report form, from iMonitor's web interface. The roll-ups can be saved for five years or more. All data is on-line and accessible. Tape backups are used for long-term storage.

iNOC currently runs its primary Network Operations Center (NOC) in Madison, WI. A backup NOC is maintained in Northbrook, IL. All systems are redundant between the two NOCs, including Frame connections to the three warehouses – all tools continue to be available without any interruption in case of a disaster at the primary NOC. The backup NOC will be staffed within two hours of primary NOC failure.

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On-Site Support

iNOC will provide on-site support at the rate of $125 per hour (billed for time field person is on-site). For on-site support that involve network communications infrastructure not related to the iMonitor service, such as acts of God, iNOC will charge $150 per hour.

For "no trouble found" scenario, iNOC will provide on-site support at no-charge. iNOC expects these situations to be infrequent and dependent on the quality of troubleshooting and the tools available to fix problems remotely. iNOC believes this can be controlled to a large degree by iNOC and thus will not impose a penalty on the client.

For "WAN provider error" scenario, iNOC will provide on-site support at $125 per hour.

Management Applications and Training

iNOC will continue to use Adtran N-Form. iMonitor tools will eliminate the need for the remaining network management applications. The cost reductions associated with eliminating the remaining three applications (Cisco Works 2000, HP OV NNM, Concord eHealth) is as follows:

Annual software maintenance	$21,500
Annual server maintenance	$10,500
Total reduction in cost	$32,000 per year

To familiarize TacDoh personnel with the iMonitor system, interfaces and processes, iNOC recommends one week of on-site hands-on training. The main components of this training include:

- iMonitor system, procedures, and processes
- User access and authentication
- Navigating with iMonitor tools
- Reporting problems, opening trouble tickets, escalation, obtaining status
- Static and dynamic reporting

iNOC also provides and strongly recommends on-line on-going training. This is available to TacDoh by prior scheduling and will cover the same topics as and when needed.

Additionally, iNOC will provide overall service updates at a quarterly meeting with TacDoh. The purpose of the meeting is to assess past performance, major issues and plan for improvement. Recommendations for improving the reliability of the network through potential infrastructure changes will also be discussed. Additionally, any new or desired features will be discussed.

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The cost of the training is included in the one-time set-up fee. On-line training is billed at $100 an hour. On-line training sessions are limited to five users per session. Additional training sessions can be scheduled as required at any time.

Additional Considerations

Documentation

TacDoh will need to provide detailed documentation of the network, showing layouts, configurations, port numbers, circuit numbers, etc. iNOC will provide a list of the required information.

Vendor Maintenance Contracts

As part of the iMonitor service, iNOC will need to manage all vendor maintenance and support agreements for all network infrastructure equipment. This helps iNOC in speedier resolution of problems, while providing TacDoh with a single point of contact for all network related questions and issues. Spares and on-site support coordination and resolution will also be handled by iNOC.

Tools Available to TacDoh IT Staff

TacDoh's IT staff has access to all information collected on TacDoh's network infrastructure. This includes Syslogs, Traplogs, polling information, etc. Additionally, iNOC's NOC will have an understanding of TacDoh's application flows. iNOC's NOC staff will assist in resolving systems and application issues related to the network. The IT staff will also have access to all iMonitor tools.

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