



Illinois Century Network

ICN Cost Recovery Concept Study



v1.0



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Introduction

- The following slides describe concepts for ICN cost recovery given the loss of state appropriation July 2014
- State appropriation in fiscal year 2014 was \$5M, reducing to \$1M in fiscal year 2015.
- Current Sources of revenue for ICN include :
 - State appropriation
 - Service fees for bandwidth from both primary and non-primary customers and commercial customers
 - Service fees for other services (non-bandwidth) (these are small thus not considered in this analysis)
 - Dark fiber leases and dark fiber maintenance
 - E-rate reimbursement
- Analysis includes introduction of membership fees and conversion of non-paying customers to paying customers
- Expected revenue with varying take rates are given – for non-paying to paying customer conversion.



Current Customer Base

- The ICN currently serves 5869 anchor institutions (meaning provides bandwidth and other services)

- The 5869 anchor institutions are made up of
 - Primary – direct – 1,225
 - Primary – non direct – 2,919
 - Non Primary – direct – 1,580
 - Non Primary – non direct – 145

- Primary customers receive “free service” based on a given allocation – which is based on number of end customers served and other characteristics
 - Primary customers pay for service they require beyond their allocated “free service”

- Non Primary customers receive no “free service” and are all paying customers.

- Only “direct” customers are considered for this analysis



Revenue from Customer Base

Revenues	Fiscal Year	
	2014 (Projected)	2015 (Projected)
State Appropriation	\$5,000,000	\$1,000,000
Public Customers	\$2,270,145	\$3,298,155
State Agencies	\$7,229,040	\$7,000,000
Private Customers	\$2,028,236	\$3,100,000
E-Rate Reimbursement (as a Recipient)	\$5,081,527	\$0
E-Rate Reimbursement (as a Provider)	\$96,237	\$160,000
Total Revenue	\$21,705,185	\$14,558,155

- Table shows projected revenue for current customer base for Fiscal Year 2014 and 2015
- From July 2014, the \$5M state appropriation reduces to \$1M.



Proposal - Principles

- Convert non-paying primary customers to paying customers by offering highly differentiated service, focused on the customers' particular needs
- Introduce membership fee for certain customer categories in return for enhanced service offering
- Introduce minimum purchase amount per month
- Enhance the service offering
- Continue developing interconnects with content providers
- Further develop on-net cloud based service offerings
- Continue working to reduce ICN Egress pricing



Proposal - Details

- Proposal is for all non-paying primary customers to be converted to paying customers. A possible alternative approach is for 'most' customers to be converted to paying customers, with the exception of the poorest / 'most in need' schools being provided free allocation. For example, the poorest 1/6 schools could be allocated the \$1M with the remaining schools converted to paying customers. Should also decide the poorest 1/6 schools or the poorest 1/6 primary customers.
- A membership fee allows to receive revenue from customers, not based on the services they purchase, but based on other categories, for example, customer type, size of customer. Benefits to customer connecting to the network must outweigh cost to customer of membership fee. Proposed to introduce membership fee for all non-primary customers and waive the membership fee for primary customers. (An enhanced service offering is provided in return for a membership fee for the non-primary customers. For the primary customers, the enhanced service offering is provided in return for paying for service.)
- Introduce minimum purchase amount by mandating that all paying customers must purchase at least \$140 worth of service, eg. 10Mb/s of bandwidth.



Proposal - Details

- Enhance the service offering by providing 5x on-net bandwidth with the purchase of Egress bandwidth. For example, if customer purchase 10Mb/s of Egress access, customer also receives 50Mb/s of on-net access (on-net meaning access within the ICN network)
- Continue developing interconnects with content providers – continue to initiate and develop discussions with content providers for a differentiated service offering, especially focused on the education market
- Further develop on-net cloud based service offerings – develop and market cloud based solutions with providers, eg. IlliniCloud. As high speed broadband becomes more ubiquitous, services move from school districts to the cloud, providing cost savings and administrative efficiencies.
- Continue working to reduce ICN Egress cost - Egress access is being purchased today for an average of \$3.2 per Mb/s. Recent RFP responses for Egress access is expected to further reduce this cost, allowing to reduce Egress pricing.

Enhanced Service & Pricing

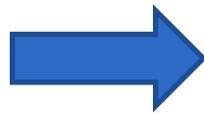


Current Pricing

ICN Broadband Services with Internet Egress				
There is an annual \$2.00 port fee per Megabit on MetroEthernet Services. The port fee may be included in the monthly recurring cost as shown.				
Service Level In Mbps	Pricing per Mbps	Monthly Port Fee	Monthly Recurring Cost with Port Fee Included	Installation
10	\$14.00	\$1.67	\$141.67	Waived
20	\$13.50	\$3.33	\$273.33	Waived
50	\$11.50	\$8.33	\$583.33	Waived
100	\$10.00	\$16.67	\$1,016.67	Waived
200	\$9.75	\$33.33	\$1,983.33	Waived
500	\$9.50	\$83.33	\$4,833.33	Waived
1,000	\$9.00	\$166.67	\$9,166.67	Waived
Note: The port fee for T1 circuits is \$55.00 per month.				
No additional cost for Layer 2 and VRF services.				

Proposed Service Pricing

Egress Service Level in Mb/s	On-Net Service Level in Mb/s	Price per Egress Mb/s	Monthly Price
10	50	\$14.00	\$140
20	100	\$13.50	\$270
50	250	\$11.50	\$575
100	500	\$10.00	\$1,000
200	1000	\$9.75	\$1,950
500	2500	\$9.50	\$4,750
1000	5000	\$9.00	\$9,000



Service enhanced with 5x On-net bandwidth





Revenue Estimate Assumptions

- Assume that (i) all primary customers become paying customers (ii) 50% of primary customers become paying customers (iii) 25% of primary customers become paying customers
- Assume membership fee for all non-primary customers is \$100/month
- Membership fee for all primary customers is waived
- All customers paying less than \$140/month for service converted to 10Mb/s service at \$140/month + membership fee



Expected Revenue

Revenues	Percentage of Public Customers Remaining with ICN		
	100%	50%	25%
State Appropriation	\$1,000,000	\$1,000,000	\$1,000,000
Public Customers	\$6,700,000	\$3,350,000	\$1,675,000
State Agencies	\$7,000,000	\$7,000,000	\$7,000,000
Private Customers	\$3,100,000	\$3,100,000	\$3,100,000
E-Rate Reimbursement (as a Recipient)	\$0	\$0	\$0
E-Rate Reimbursement (as a Provider)	\$160,000	\$160,000	\$160,000
Membership Fees	\$1,900,000	\$1,900,000	\$1,900,000
Total Revenue	\$19,860,000	\$16,510,000	\$14,835,000

- Table shows snapshot as of July 2014, with varying 'take rates' of public customers



R&E Network Business Models

- Cost Recovery Models of R&E networks (as of March 2011)

Cost Recovery Models

- General Models
 - Membership Based
 - Membership + service fee (15)
 - Membership only (3)
 - Straight fee for service (4)
 - State appropriation – may also include fee for service (6)
- Cost recovery related to org structure

Source: R&E Network Business Models. Presentation to U.S. UCAN Economic Task Force, March 17, 2011 by Carol Farnham, MIDnet and Jen Leasure, The Quilt



Service Differentiation

- The following slides discuss how ICN will further service differentiation. ICN does not compete with commercial providers on the basis of only commodity internet pricing.
- The ICN price point reflects the service differentiation and enhanced service provided.
- Work will take place in fiscal year 2015 to further ensure / promote a differentiated service offering and covers the below
- Differentiated and Enhanced Service Offering:
 - On Net / Cloud Services
 - ICN on-net usage versus public internet access
 - Egress Pricing



On Net / Cloud Services

- ICN has peering connections to 14 content providers with access being completely on-net.
- ICN analysis shows that approximately 50% of K-12 traffic stays within the ICN network and 50% leaves to the public internet. With the enhanced service including 5x purchased egress bandwidth, use of peered content provider traffic encouraged
- Cloud services classed as on-net with direct connection to IlliniCloud and other cloud providers. Available cloud services focused on the education community
- Extensive caching effectively utilizes on-net bandwidth available and reduces Egress traffic



Use of ICN On-Net Backbone

- Headroom available on ICN backbone links for additional traffic, especially with intelligent over-subscription methods
- The enhanced service offering will increase on-net usage of the ICN network
- As cloud based services develop and as application servers move from the school districts to the cloud, highly reliable, redundant connections to cloud services will be required
- Traffic will evolve to a greater percentage being on-net, due to Illinois based services and inter-connection with other Research and Education networks



Egress Pricing

- Average ICN Egress cost is currently \$3.2 per Mb/s per month with service from three vendors
- Egress cost expected to reduce in second quarter of fiscal year 2015
- Further Egress cost reductions expected due to periodic release of RFP
- Will enable ICN Egress pricing to continually reduce year on year