Internet Bottlenecks

- **First Mile** (Server Capacity) – 70% of website performance problems according to one study
- **Backbone** – Plentiful, but some shortage within metropolitan areas
- **Peering** – Exchange of traffic between NSPs
- **Last Mile** to home
  - 56 K modems are slow
  - Shared LAN limitations

Solutions

- Expand Bandwidth
  - Being done
- Mirroring web cites
  - Put exact copy of same web page to multiple servers
  - Tricky to duplicate content
- Caching
  - Cache page at ISP POP
  - Problem: Stale Content
  - Problem: Hard to count “click throughs”
- **CDN** – Free Flow Product
  - Put special servers at POP
  - Store video clips and pictures at these servers
  - Web user’s Http requests redirected to local servers for heavy content
  - Reduced load on network, and main servers

Akamai Infrastructure
13000 servers in 954 networks by 2001

Customers - Large Commercial Websites

Revenue model - $2000 Charge per Mbps per month served vs. $500 per Mbps per month for ordinary access
**2000 financials**
$90 million rev
$42 million cost of rev (dep, bw, rent)
  Hope was depreciation would decline in future.
$152 million SG&A (selling general and administrative) (largely sales force)
  Hope was, SG&A would stay fixed as revenue grows

**Competition**
Hosting firms (substitute)
   Exodus
Other CDNs
   Sandpiper, Adero, Mirror Image
Content Alliances
   Akamai’s competitors banded together to share networks

**2001**
Bad
   Dot-coms bust
   Customers leave “churn rate goes to 22% per quarter”
Good
   Hosting firms go bust (exodus)
   Some CDN competitors go bust.
   Competing CDN alliances mired in problems

**New Product: Edge Suite**
Assemble dynamic pages at edges rather than just serve heavy objects
Value proposition
   Performance improvement
   Cost and complexity reduction
   Scalability
   Security
Pricing – higher than old service
   Soon edge suite dominated revenue

Dynamic CDN technology: ESI (edge sides includes)
   Develop as open standard why?
   Akamai not big and credible enough to force a de-facto standard on market

**Marketing**
Difference in selling old vs new products:
   Old product
      Geared toward speeding up websites
      Revenues of their clients depended on speed
      Easier to get sale
   New Product
      Simplify company IT function
      Cost vs. revenue center
      Harder sell. More data driven…
Consequently new product needs more professional sales force
Channels?
Distribution Partners (IBM) credibility
Direct Sales Force too

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<tbody>
<tr>
<td><strong>Consolidated Statements of Operations Data:</strong></td>
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<tr>
<td>Revenues</td>
<td>$210,015</td>
<td>$161,259</td>
<td>$144,976</td>
<td>$163,214</td>
<td>$89,766</td>
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<tr>
<td>Total cost and operating expenses</td>
<td>$161,048</td>
<td>$172,370</td>
<td>$327,580</td>
<td>$2,577,108</td>
<td>$989,359</td>
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<tr>
<td>Net income (loss)</td>
<td>34,364</td>
<td>(29,281)</td>
<td>(204,437)</td>
<td>(2,435,512)</td>
<td>(885,785)</td>
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<td>Net income (loss) attributable to common stockholders</td>
<td>34,364</td>
<td>(29,281)</td>
<td>(204,437)</td>
<td>(2,435,512)</td>
<td>(885,785)</td>
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<tr>
<td>Net income (loss) per share:</td>
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<tr>
<td>Basic</td>
<td>$0.28</td>
<td>$(0.25 )</td>
<td>$(1.81 )</td>
<td>$(23.59 )</td>
<td>$(10.07 )</td>
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<tr>
<td>Diluted</td>
<td>$0.25</td>
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<td>$(1.81 )</td>
<td>$(23.59 )</td>
<td>$(10.07 )</td>
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<td>Shares used in per share calculation:</td>
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<tr>
<td>Basic</td>
<td>124,407</td>
<td>118,075</td>
<td>112,766</td>
<td>103,233</td>
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(In thousands, except share data)