Trying to understand the nature of the evolving ICT world

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Telecom economics:

- worldwide telecom revenues: $2,000 billion
- at $1 per Mbps transit pricing, worldwide IP traffic: under $10 billion
- worldwide ad spending: around $500 billion
Collapse of traditional telecom cost structure:

- old Bell System estimate: 1/3 access, 1/3 switching, 1/3 long distance
- now: switching and long distance almost in the noise
- Amazon’s cloud at $17 B/yr could do all the switching for world telecom industry of $2,000 B/yr
- giant CDNs and Cloud players building out networks almost to the edge
Truly highly capital intensive cases from history:

<table>
<thead>
<tr>
<th>year</th>
<th>industry</th>
<th>revenues</th>
<th>growth</th>
<th>capex</th>
</tr>
</thead>
<tbody>
<tr>
<td>1922</td>
<td>Bell System</td>
<td>$547 M</td>
<td>11%</td>
<td>$194 M</td>
</tr>
<tr>
<td>1857</td>
<td>UK railways</td>
<td>£24 M</td>
<td>9%</td>
<td>£10 M</td>
</tr>
</tbody>
</table>

Ratio of book value to revenues was over 3 for the Bell System in 1922, and over 13 for British railways in 1857.

Today’s telecom: capex under 15% of revenues, some Wall Street analysts hoping cable can get down to 10%
The uncertain future:

- key action increasingly hidden in opaque clouds/networks
- those clouds likely to marginalize traditional networks
- saving graces: (i) connectivity, not content is king and (ii) value inversely proportional to volume