IEEE Consumer Technology Society

Infrastructure & Opportunity

Software + Connectivity

This is a draft. Please send feedback and suggestions to InfraTalk202301@bob.ma
The “Agree” screen
“Connected Anywhere in the World"
From Telecom ➔ Infrastructure

#1→Dest1 00101101010100011
#3→Dest1 00111101010100011
#5→Dest1 00101101110100011
#2→Dest1 00101101110100011
#4→Dest1 00101101110100011
Infrastructure as a Resource
Sharing ➔ Abundance of Capacity

5G Networking as a service
Software internet etc.

Resource

Resource
Reformers proposed the establishment of a ‘Central Thinking Office,’ a precursor of today’s urban control room or city dashboard.

The card catalog could be the indexing system for any business... It could even index the operations of a city.
Services Facilities ➔ Infrastructure

Cost Center

Public Pack Infrastructure
It can be Complicated

<table>
<thead>
<tr>
<th>Communication Technology</th>
<th>Standard/operating bands</th>
<th>Frequency</th>
<th>Range (approximate)</th>
<th>Data rate</th>
<th>Topology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bluetooth</td>
<td>IEEE 802.15.1</td>
<td>2.4 GHz</td>
<td>100 m</td>
<td>3 Mbps</td>
<td>Point-to-point</td>
</tr>
<tr>
<td>Z-Wave</td>
<td>-</td>
<td>900 MHz</td>
<td>100 m</td>
<td>8 to 100 kbps</td>
<td>Star, cluster, mesh</td>
</tr>
<tr>
<td>ZigBee</td>
<td>IEEE 802.15.4</td>
<td>2.4 GHz</td>
<td>100-200 m</td>
<td>25 kbps</td>
<td>Mesh</td>
</tr>
<tr>
<td>LoRa/WAN</td>
<td>LoRa Alliance</td>
<td>868-915 MHz</td>
<td>1-3 km</td>
<td>290 to 50 kbps</td>
<td>Star</td>
</tr>
<tr>
<td>WiFi</td>
<td>IEEE 802.11 (Wi-Fi)</td>
<td>2.4 GHz, 5 GHz</td>
<td>100 m</td>
<td>20 Mbps to 1 Gbps</td>
<td>Mesh</td>
</tr>
<tr>
<td>RFID</td>
<td>ISO/IEC 14443</td>
<td>13.56 MHz</td>
<td>1 m</td>
<td>106 kbps</td>
<td>Point-to-point</td>
</tr>
<tr>
<td>NFC</td>
<td>ISO 14443</td>
<td>13.56 MHz</td>
<td>1 m</td>
<td>106, 212 or 424 kbps</td>
<td>Mesh</td>
</tr>
<tr>
<td>UWB</td>
<td>IEEE 802.15.3</td>
<td>2400 MHz</td>
<td>10-30 m</td>
<td>11-55 Mbps</td>
<td>Star</td>
</tr>
</tbody>
</table>
It can be simple: Ambient Connectivity™
Stakeholders
The (non-cost) of Realizing Abundance

Cost >$1,000,000/mile
Free to use
Costs are Rising
Owned by Community

Inherent Conflict of Interest

Broadband Cost ~$50,000/mile
$1000/Year Forever!

Multiple:
Redundancy, Not competition
All profitable??

If Ownership!
Free to use!

$1000 Mimo!
Free to use
Costs Plummeting

$40,000 Subscribers
5G/MIMO
Making it Happen

The key is the geographic footprint

**AKA Infrastructure**

Residents are the stewards
Further Reading

- [https://Frankston.com](https://Frankston.com)
- [https://rmf.vc/FurtherReading](https://rmf.vc/FurtherReading)
- [AC202212@bob.ma](mailto:AC202212@bob.ma)

Terms to think about

- The Between vs. Networks
- Ambient Connectivity as architecture
- Enabling the virtuous cycle

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Notes & Scrap Heap Slides Lie Beyond
Electrify Everything!
Denying Ourselves Abundance

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$40,000 Subscribers
5G/MIMO
Shifting the Paradigm

Not Facebook
Abundance of What
Surface and behind
Connectivity

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Thinking Outside the Pipe
Traditional – a “pipe” potential connection
Enabling the Future
Creating Value

Ambient Connectivity
Public Packet Infrastructure
One-in-Million – Implement and Share All Needed Resources to Build On & Repeat

And many many others less well known

The Virtuous Cycle
Videos

https://www.pexels.com/
Thinking Outside the Pipe