

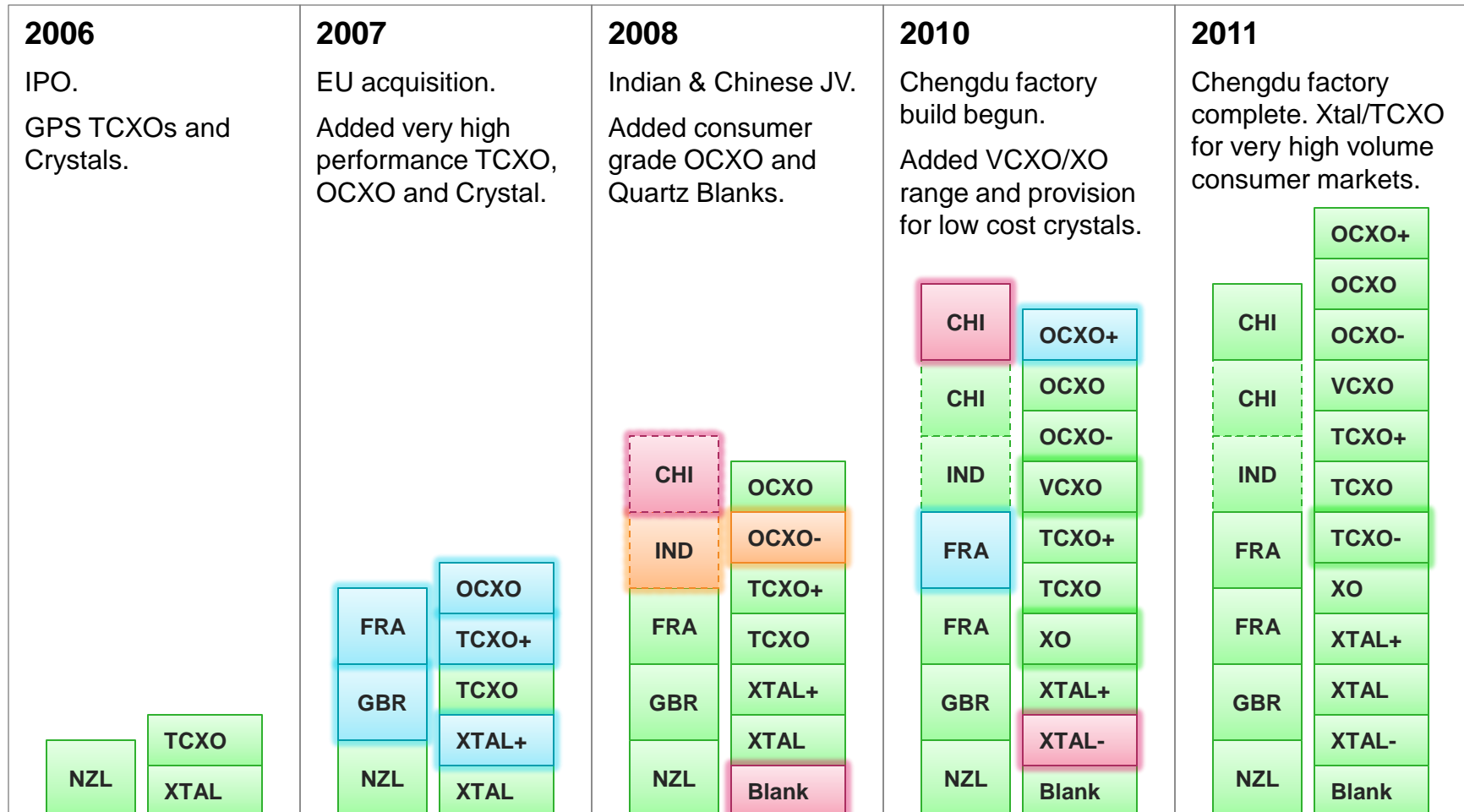


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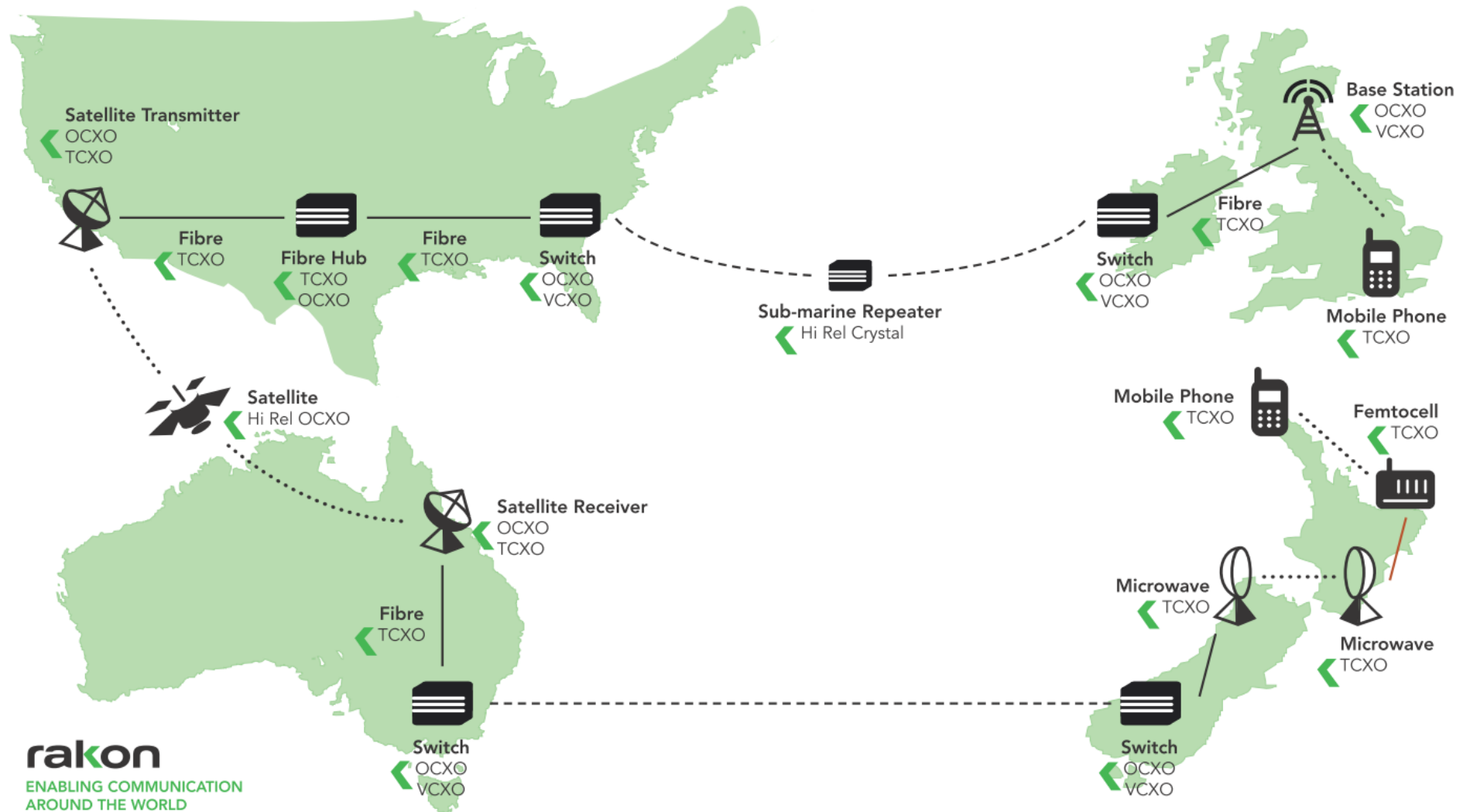
Building a Global Leader

Since 2006 Rakon has undergone rapid expansion, from a niche supplier to a global leader in frequency control.



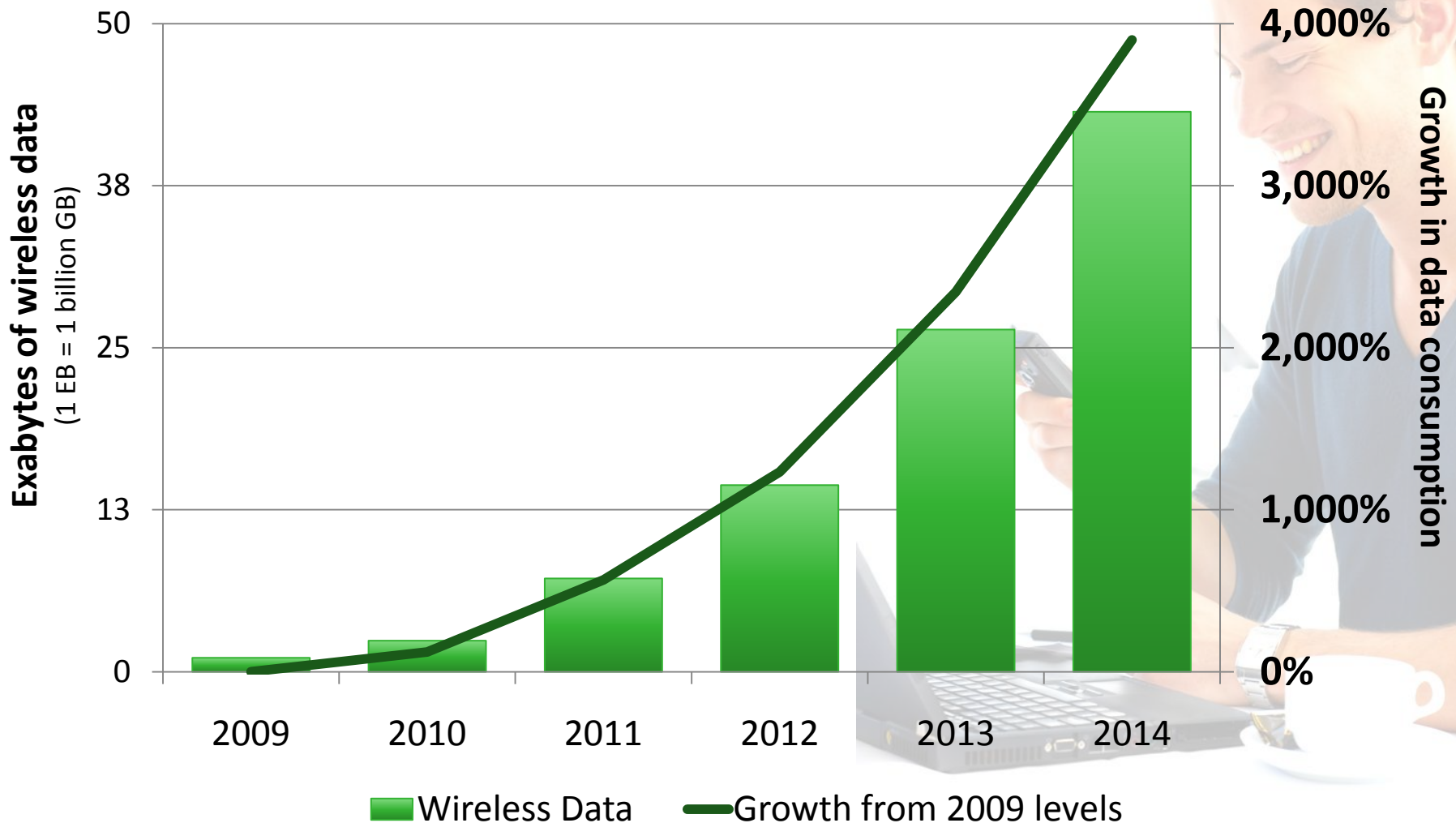
Enabling Communications

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Data Crunch

By 2014 over **40 billion gigabytes of data** will be sent wirelessly every year, up **3,900%** on current levels.

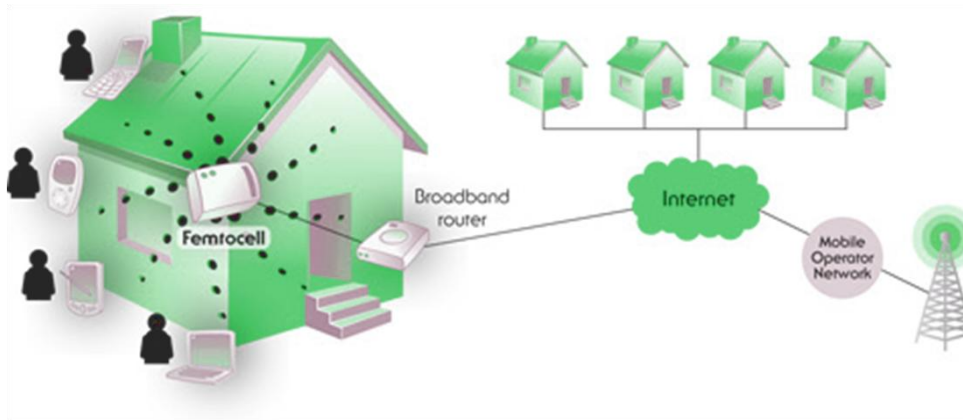




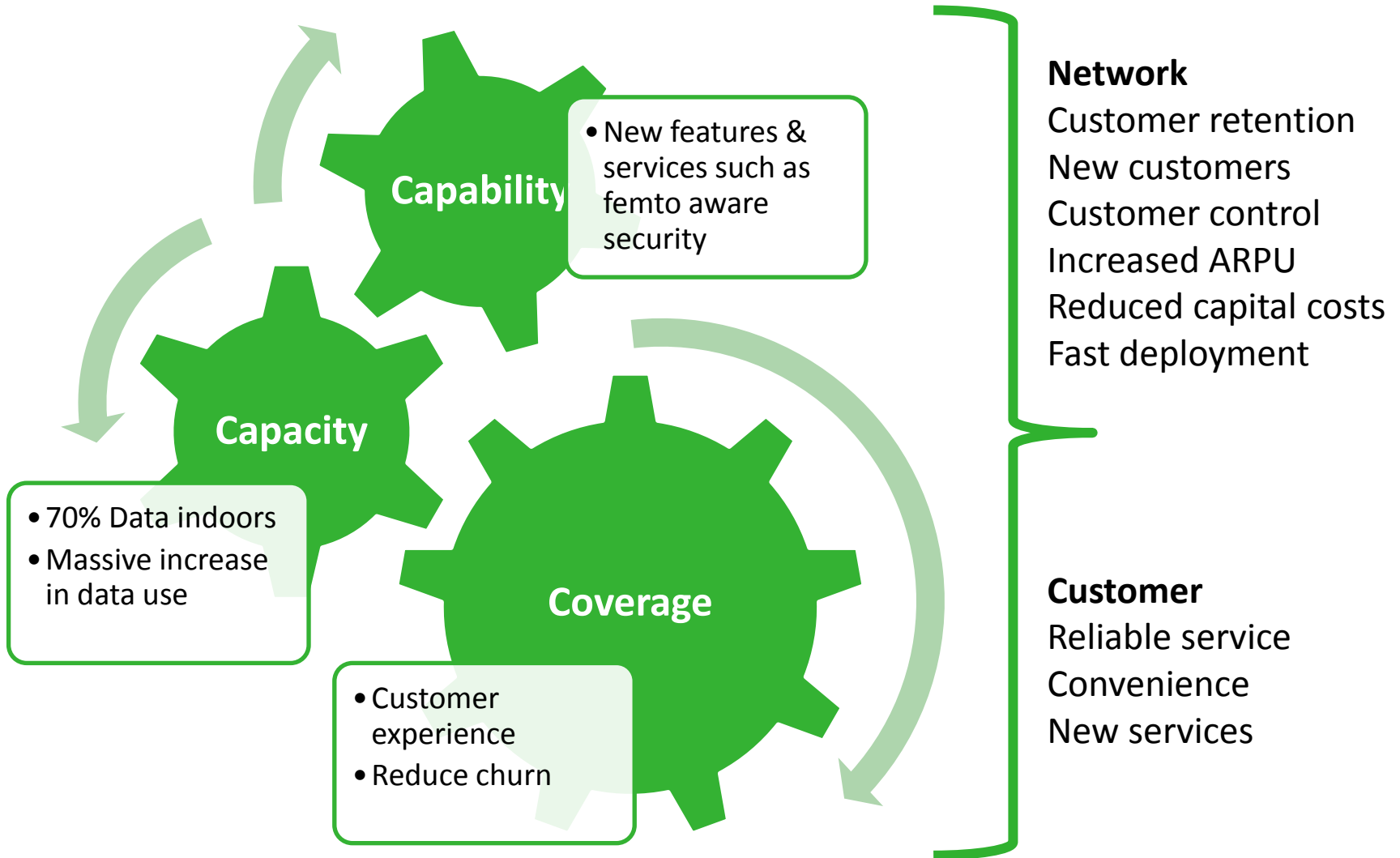
Femtocells

< Femtocells

- › Small home or enterprise based base station.
- › Provides cellular coverage using broadband internet connection to connect to the network.



Femtocell Drivers



Femtocell Update

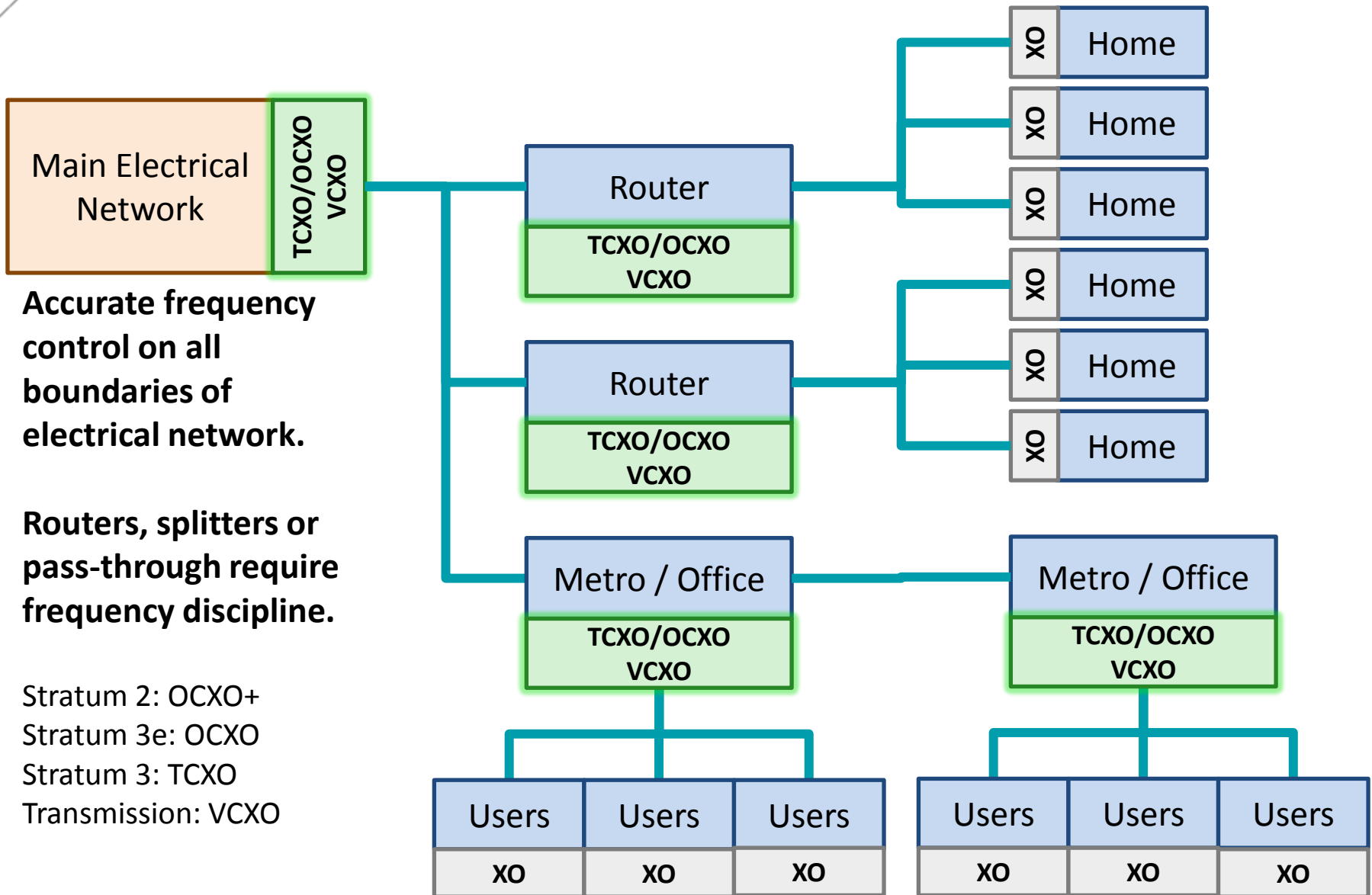
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Status	Technical	Rakon
<p>Announced roll outs</p> <ul style="list-style-type: none">Softbank (JP)NTT DoCoMo (JP)Starhub (SG)Chungwha Telecom (TW)China Unicom (CN)SingTel (SG)KDDI (JP)Sprint-Nextel (US)Verizon (US)AT&T (US)Vodafone (UK)Vodafone (SP)Vodafone (GR)Optimus (PT) <p>Greater adoption and more roll outs as business models settled.</p>	<p>Extremely tough frequency stability requirement.</p> <p>Require OCXO performance at TCXO price.</p>	<p>Industry partner since early development.</p> <p>Member of industry body.</p> <p>Has leading commercial solution (Pluto TCXO).</p> <p>Strong roadmap.</p> <p>Participating in all current commercial roll-outs.</p> <p>Estimate >90% market share.</p>



Fibre

Fibre Networks



Status	Technical	Rakon
<p>Global push for high speed broadband.</p> <p>Heavy investment in network infrastructure.</p> <p>Fibre to the home initiatives.</p>	<p>Synchronised timing is critical.</p> <p>Accurate local timing reference required at electrical/optical boundaries.</p> <p>Stratum 2/3e/3.</p> <p>High frequency VCXOs widely used in transmission.</p>	<p>Leader in Stratum 3 solutions (Pluto TCXO).</p> <p>Developed competitive OCXO range for Stratum 2 & 3e.</p> <p>Supplier status with all major equipment providers (Ericsson, Alcatel-Lucent, Fujitsu, Huawei, ZTE, Nortel, Ciena, etc...)</p> <p>Releasing VCXO range to offer complete solution.</p>



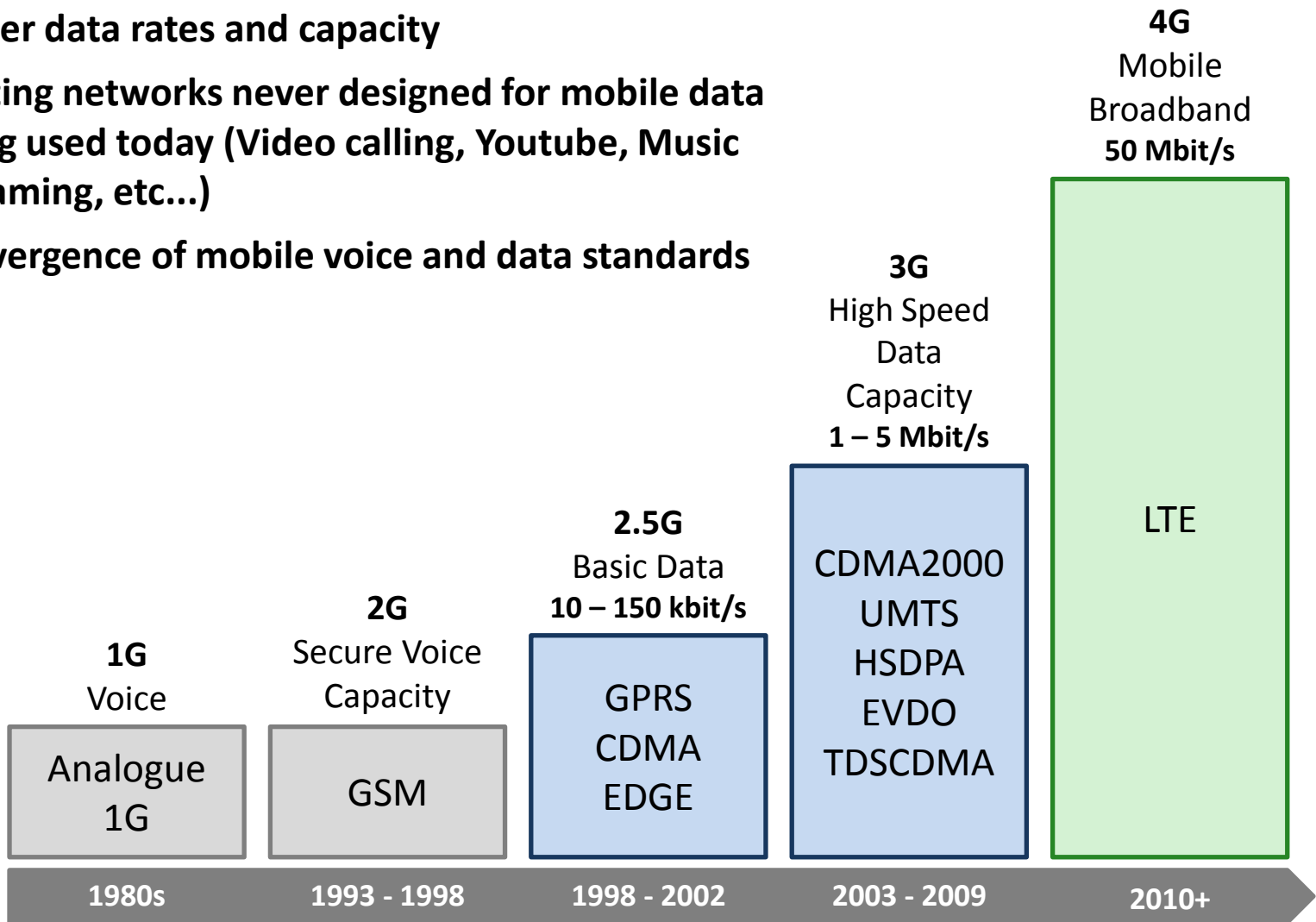
LTE

3GPP Long Term Evolution

Higher data rates and capacity

Existing networks never designed for mobile data being used today (Video calling, Youtube, Music streaming, etc...)

Convergence of mobile voice and data standards



Status	Technical	Rakon
<p>Growing demand for high speed mobile broadband. Existing networks cannot deliver performance required.</p> <p>Major carriers announced network upgrades to LTE by 2011 (AT&T, Verizon).</p> <p>Smaller networks adopting LTE to gain market share.</p> <p>Major handset manufacturers commit to LTE handsets (Nokia, Samsung)</p>	<p>Very demanding on frequency reference.</p> <p>Requires >100x more stability than GSM (0.1ppb vs 10ppb).</p> <p>Requires more base stations to be deployed to achieve promised capacity.</p>	<p>Close relationship with all network equipment developers.</p> <p>Less barriers to entry on new developments.</p> <p>Reputation for highest performance, best quality products.</p> <p>Portfolio of products well suited.</p> <p>Performance is key with LTE.</p>



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