

Future energy sources for mobile communications

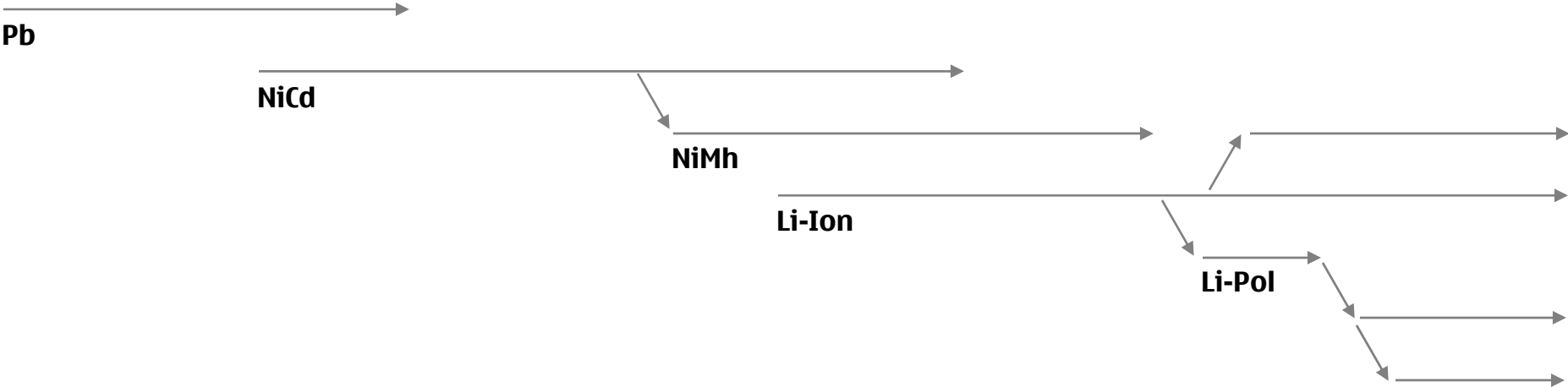
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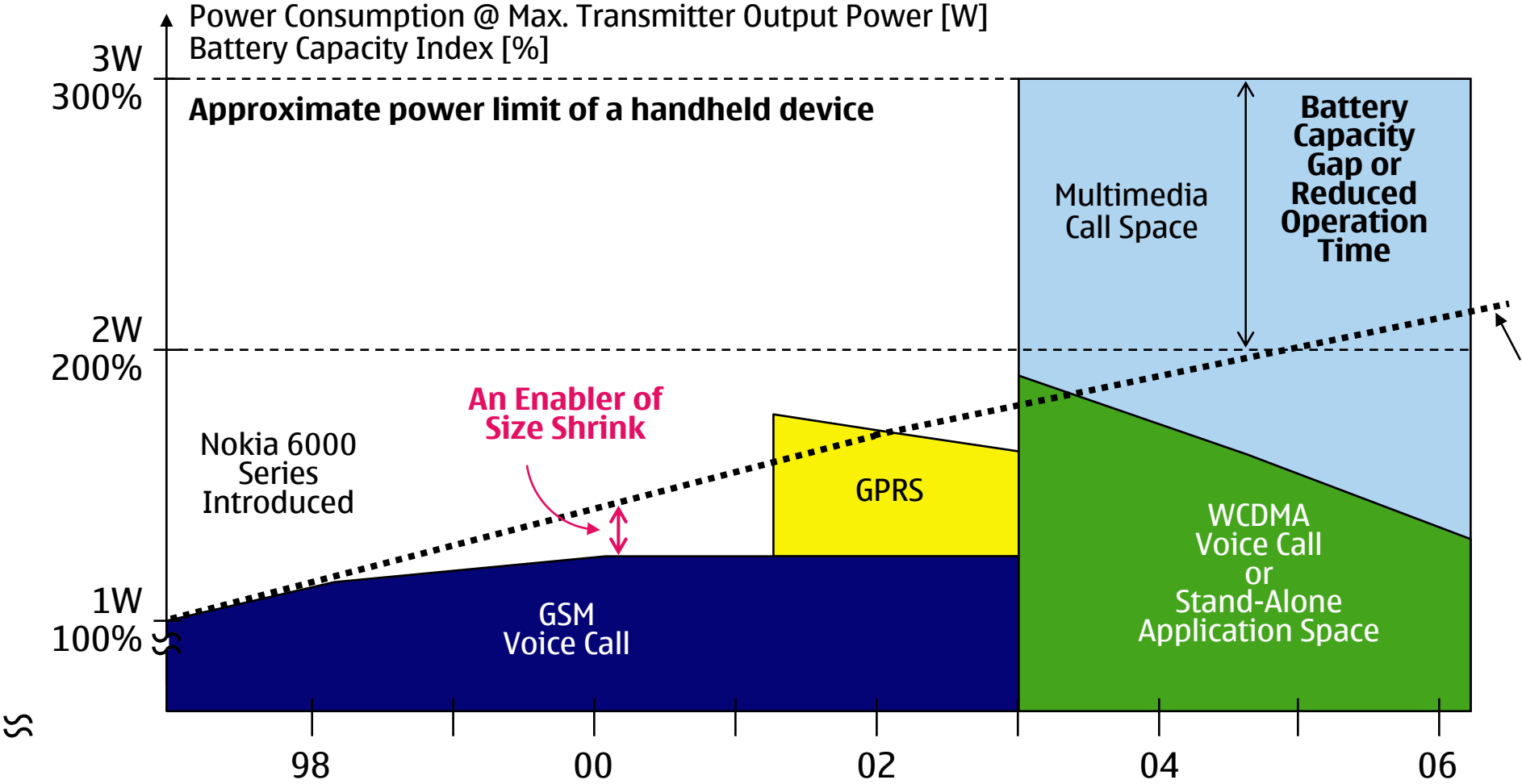
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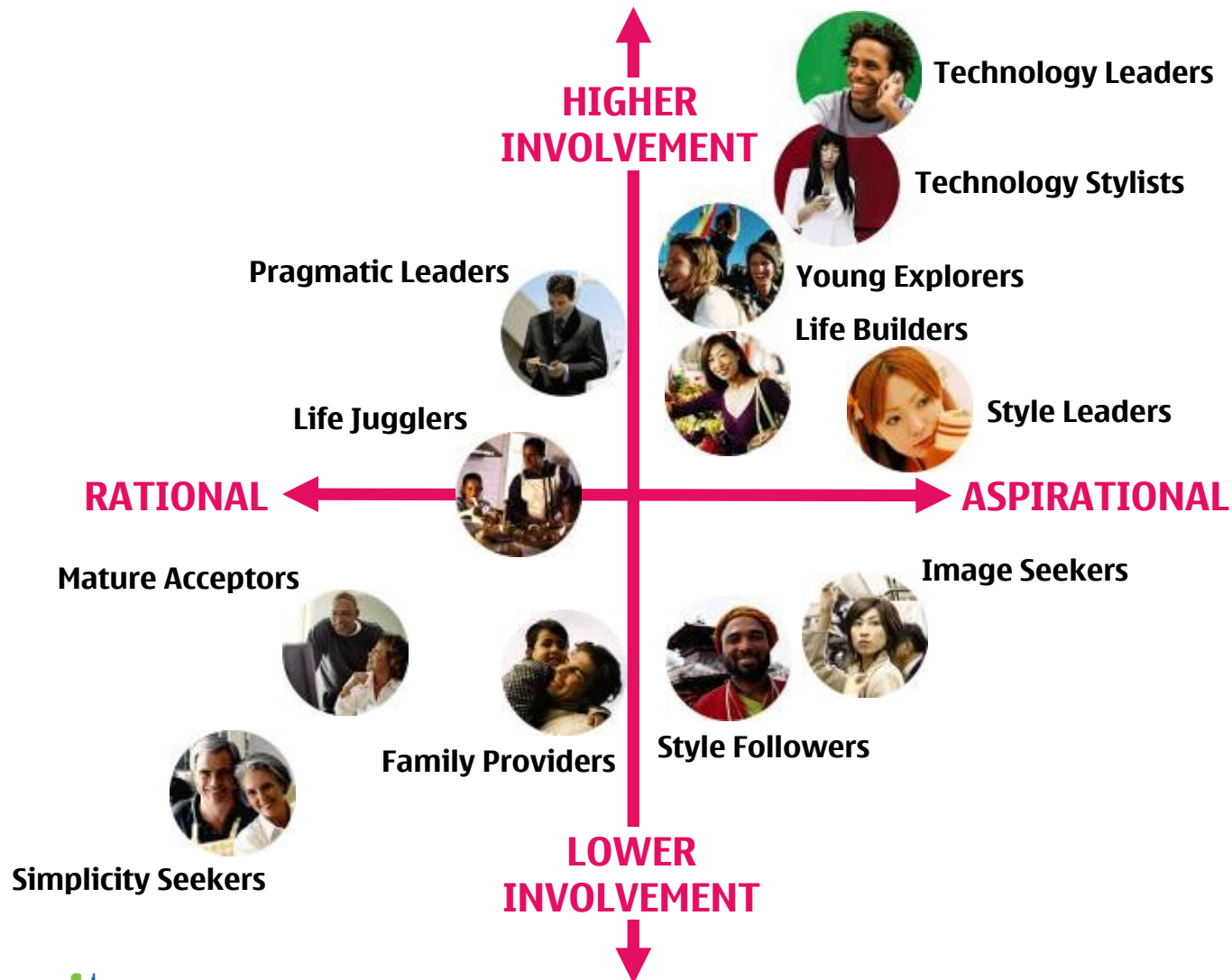
A short history of batteries



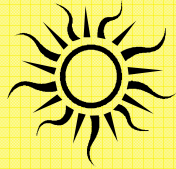
A short history of power demand



Finding universal solutions to a diverse market



New energy sources; possibilities for energy storage and charging



Solar Energy

- Solar cells
- Generations I - IV
- Efficiency
- Cost
- Usability
- Environmental durability



Fuel Cells

- Chargers
- Add-on
- Integration
- Fuel: Methanol, Hydrogen, Ethanol, Formic acid, Biomass....
- Usability
- Availability
- Regulations

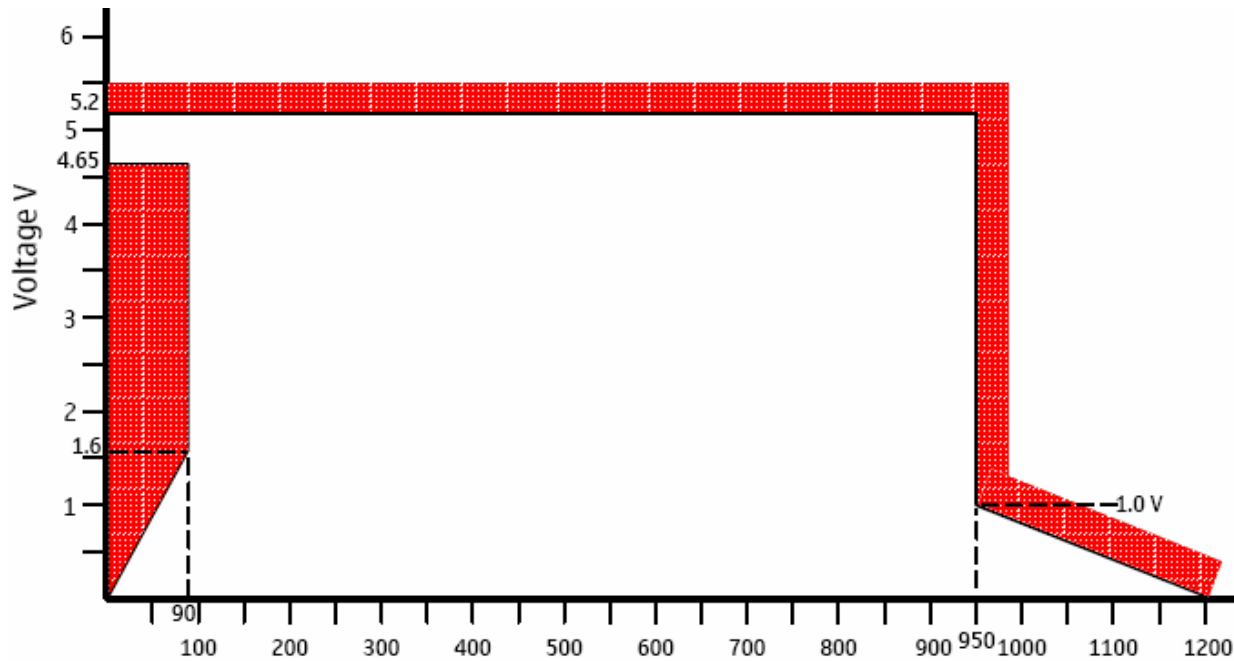


Energy harvesting

- Wind mills
- Vibration
- Human Power
- Muscles (mech.)
- Bike and shoe heel charger
- Skin potential (el.)
- Body heat (thermal)

What can we do today

- The Energy and Power Management (EPM) system controls battery and manages charging
- Open platform for alternative charging technologies



- Specification available from Forum Nokia <http://www.forum.nokia.com>

Thank You!

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