

# Information & Communications Technology (ICT) Vendors: Helping Enterprises Go Green

Daniel Bauer

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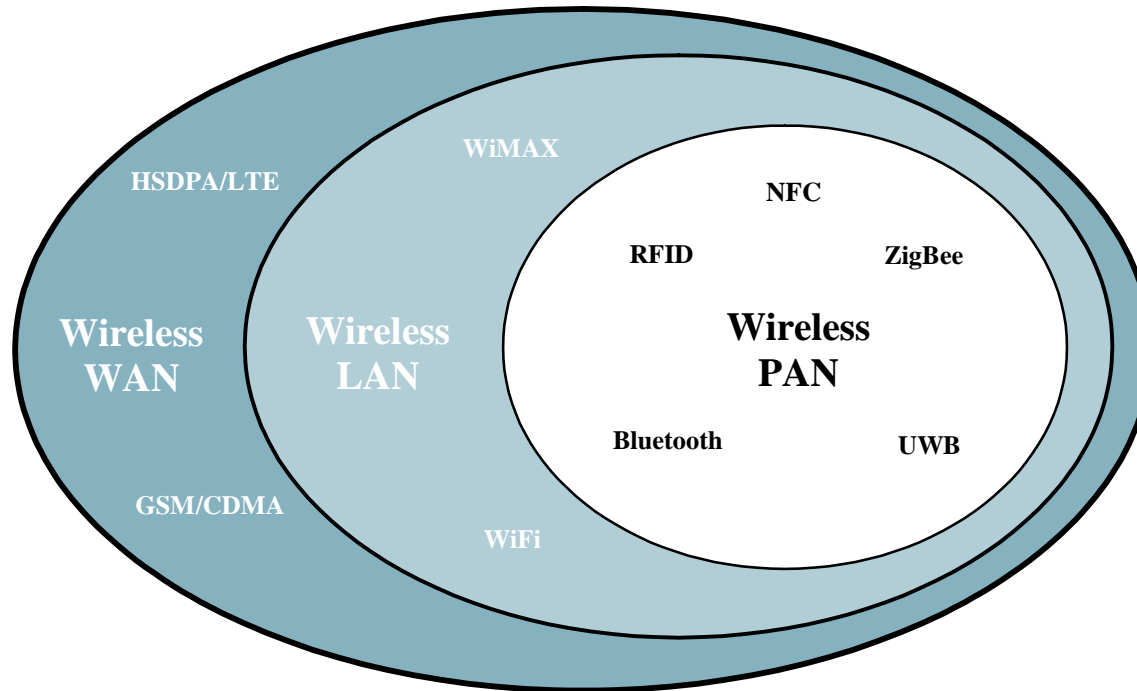
THE  
INSIGHT  
RESEARCH  
CORPORATION

- Rising Global Greenhouse Gas Emissions resulting in Climate Change
- Global Climate Initiatives
- Greenhouse Gas (GHG) Emissions measured in terms of Metric tons of Carbon Dioxide (Mt CO<sub>2</sub>)
- Emissions Trading Markets

- Financial Value attached to GHG Reductions
- Global Carbon Market Valuation
- Investment in Clean-Energy and Carbon Funds
- Green Communications Portfolio
- Potential for Reducing GHG Emissions and Environmental Footprint

- Semiconductor Chip Manufacturers
- Access Device Manufacturers
- Network Infrastructure – Cellular vs. non-Cellular vs. RFID
- Software Operating Systems
- Applications and Services
- Consumer, Enterprise, Mobile Worker Behaviour
- Network Service Offerings – Managed Services
- Service Providers – MSPs, MVNOs, Carriers, etc.

# Wireless Technology Platforms



Wireless Technology	Data Rate per Second	Range	Power Required per Cell Site	Solar/Wind Power Solution
GSM	400k	35km	600-2300W	4-6kW solar panel and 6kW wind turbine
WiMAX	15Mb	5km	1300W	4kW solar panel and 2.5-6kW wind turbine
WiFi	54Mb	50-100m	<30W	1kW solar panel and 0.6-2.5kW wind turbine

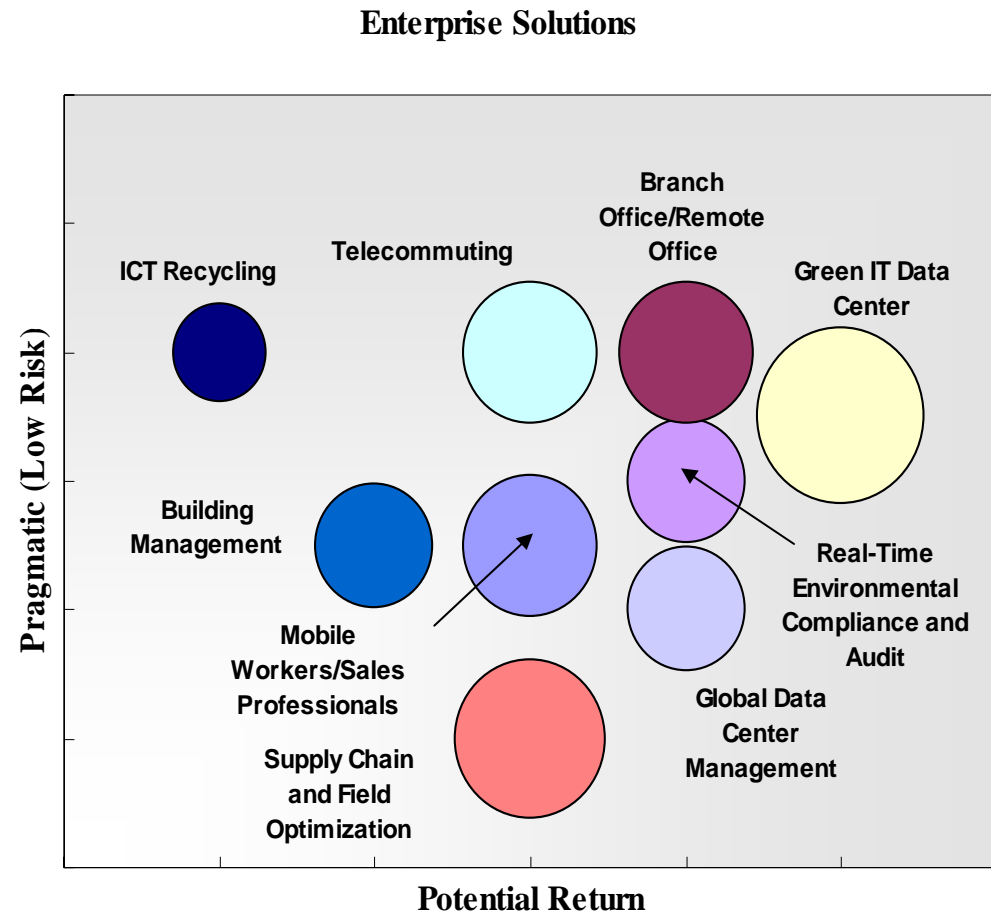
## Domains

- Transportation Demand Management (TDM)
  - Location-Based Services (LBS)
  - Unified Communication Services (UCS)
  - Mobile Resource Management (MRM)
- Demand-Side Management (DSM)
  - Smart Metering
  - Home Automation/Building Management
  - Data Centers
- Machine-to-Machine (M2M)
  - Sensor Networks and Devices
- ICT Device Recycling
- Environmental Compliance and Audit

- IM and SMS (Instant Messaging and Short Message Service)
- MMS Picture Messaging
- Ringtones, Screensavers, Games, Wallpaper
- Video Conferencing Services
- Audio Conferencing Services
- Radio Conferencing Services
- LBS Location-Based Services
- Off-portal
- Bundled Data Services
- Adult and Gambling
- m-Commerce – Readers, Tags, NFC Near-Field Communications

## Major ICT-Based Green Initiatives graphed by:

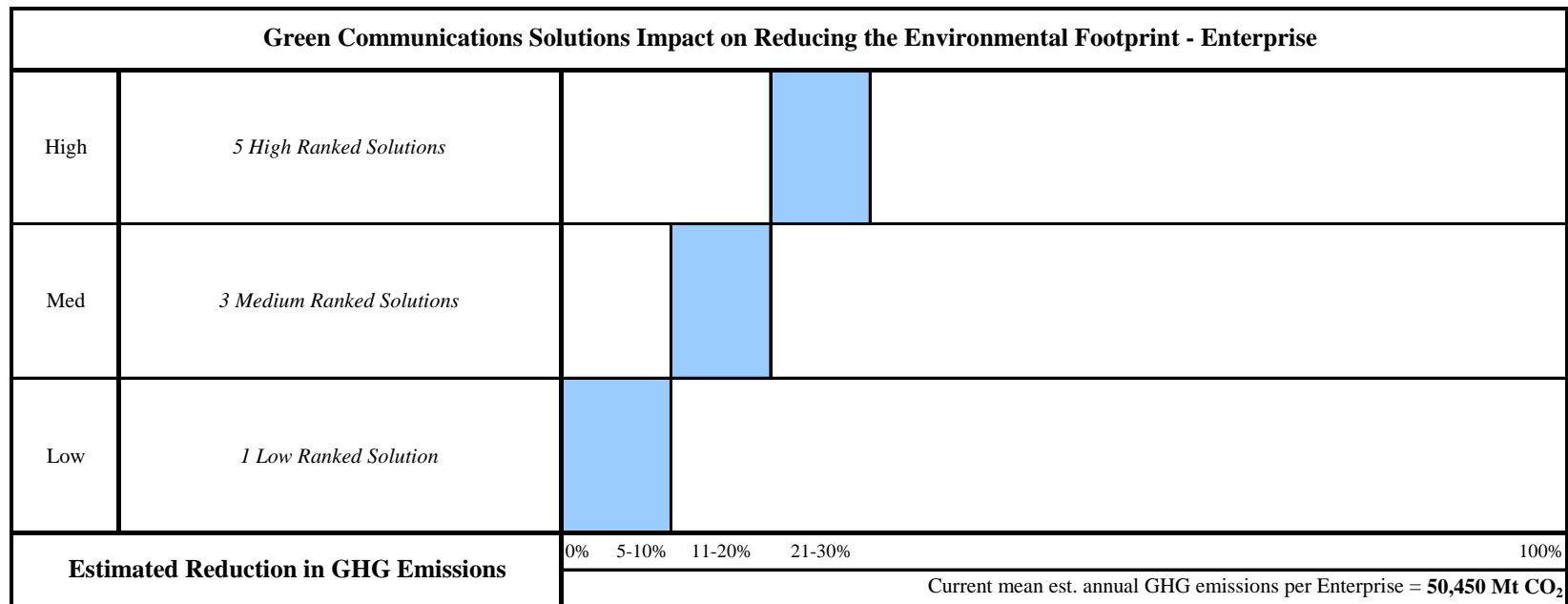
- Potential (Return)
  - From Case studies
- Pragmatism (Implementation Risk)
  - Relative difficulty implementing change into enterprise
- Size of Bubble – ‘Buzz’
  - Indicates our impression of the Buzz or Hype in the media



## Major ICT-Based Green Solutions

- Data Center
- Global Data Center Management
- Telecommuting
- Mobile Workers and Sales Professionals
- Supply Chain & Field Services
- Branch Office/Remote Offices
- ICT Device Recycling
- Building Management
- Real Time Environmental Compliance and Audit

# Sample Enterprise Environmental Footprint Reduction



# Green Service Provider Examples

- EnerNOC
- Level3 Communications
- Comverge
- Oxxio
- Enel SpA
- Green Mobile
- NTT DoCoMo
- MTC Namibia

## Enterprise overall Green program (NTT Group / DoCoMo, Japan)

Environmental Investments: 1,433M Yen or US\$11.992M

Economic Benefits: 2,394M Yen or US\$19.658M (US\$1=119.49Y)

- Overall Greenhouse Gas Emissions Reduction for 2005: 349,000 Metric Tons of Carbon Dioxide (MtCO<sub>2</sub>). Annual Target: 355,000 MtCO<sub>2</sub>
- Solid Waste Dispersion: 9,497 Tons
  - Device Recycling
    - o Promoted consignment to vendors capable of recycling

## Global Data Center Management (HP)

- 85 data centers in 29 countries to 3 paired centers
- 5,000 applications to 1,100 applications
- 21,700 servers to 14,000 servers
- 762 data marts to Single View of Enterprise
- Power consumption for electricity and HVAC reduced by 65%
- Aggregate savings US\$50Million in power consumption for 70 Enterprise customers
- Reduce average IT cost per employee

## Global Green Data Centers (Google)

- Creation of global distributed computing network
- Green, reliable power proximity
- Readily accessible data networking
- Each center hosting approximately 20Million users
- Inexpensive processors and disk drives
- Centers located in over 25 countries (Total Servers WW: 450,000)

## Green Wireless Base Stations (Motorola/MTC Namibia)

- Wind and solar powered GSM base stations
- Green solution an alternative to traditional fuel generators
- Allows rapid deployment into rural areas where main grid access is unavailable
- Establishes a platform for WiMAX technology and other offerings that require less power than cellular technologies such as GSM and CDMA.

## Recycling / Waste Diversion (HP)

- Sophisticated Recycling Processes and Machinery
- 920M pounds/420,000 tons cumulative 75,000 tons/annum
- 2.4 million units reused every year
- Return and Recycling program: 45 countries

## Climate Savers Computing Initiative

<http://www.climatesaverscomputing.org>

- Initiative comprised of 25 ICT companies including HP, Intel, Google, Microsoft, World Wildlife Fund, and US EPA.
- Goal is to increase energy efficiency computing; reducing energy costs by US\$5.5 billion and GHG emissions by 54 million tons by 2010.

## The Green Grid

<http://thegreengrid.org>

- Consortium of ICT companies seeking to lower overall power consumption and improve efficiency in global data centers.

## The Telework Coalition

<http://www.telcoa.org>

- Consortium of diverse companies seeking to enable virtual, mobile and distributed work.

# The Insight Research Web Site

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