

# Nokia Siemens Networks IT goes green in Data Centers and Virtual conferencing

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NSN Quality, Processes & IT Strategy 2009 Instructions / Rolf Giesbert / January 2009



## Business Environment Key Trends

### Environmentalism is already mainstream

Customer and employee interest is increasing. There is a major potential for both internal and external branding. Environmental thinking has shifted from the so called Activist group to Neo-Green people and is already becoming elemental part of the main stream thinking. Real intrinsic changes are needed, not just green washing.

### Cost and availability of energy is hinting at energy crisis

The cost of energy will increase in future as the fossil fuels are running out at same time as the usage of energy will increase. This will lead to actions on energy saving and looking for alternative energy sources

### Renewable energy becoming a viable option

Advanced technology makes it possible to use renewable power to substitute for fossil fuels. Advances are made both in energy efficiency of different equipment as well as in renewable power technologies themselves.

### True corporate responsibility becoming the expected norm

Sustainability reporting is expected from corporations. Both regulatory and voluntary measuring and auditing practices are emerging, and more transparency is called for.

### Regulation shapes next generation fixed access deployment

Outsourcing and infrastructure sharing, broadband regulation, functional separation and VoIP regulation for Next Generation Access.

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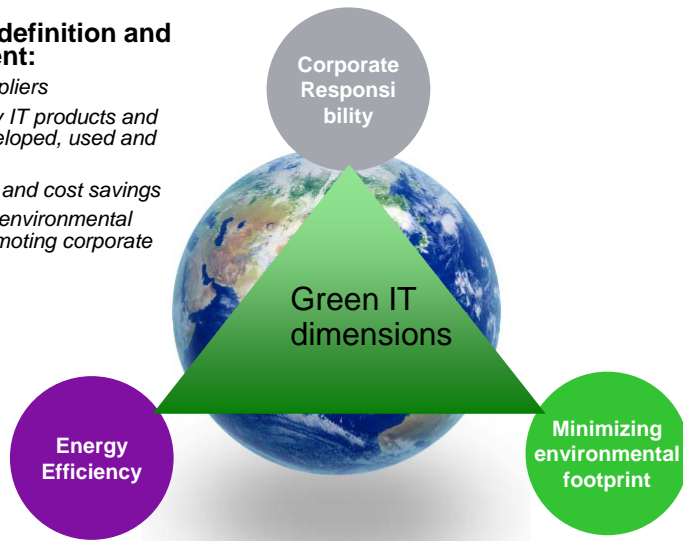


## Green IT concept

### NSN Green IT definition and strategic intent:

*NSN IT and its suppliers*

- *changing the way IT products and services are developed, used and disposed*
- *to gain efficiency and cost savings*
- *while minimizing environmental footprint and promoting corporate responsibility.*



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## Green IT concept

- **Responsible behavior** in managing the impact on environment in compliance with ISO 14001
- **Increasing awareness** about Green IT
- **Cooperation** with universities, EU or non-governmental organizations
- **Favoring greener suppliers** and greener products

Corporate Responsibility

Green IT dimensions

- **Promoting IT solutions** as means to avoid CO2 emissions
  - tele- and videoconference
  - remote work
  - logistics solutions
- **Waste management**

Minimizing environmental footprint

Energy Efficiency

- **Data center energy efficiency**
- **Server virtualization**
- **Optimize power usage** for idle computers and printers

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## NSN IT is currently focusing on two categories

Green through IT = New way of working in NSN

- HALO Studios
- WebEx
- Voice conference

Green in IT

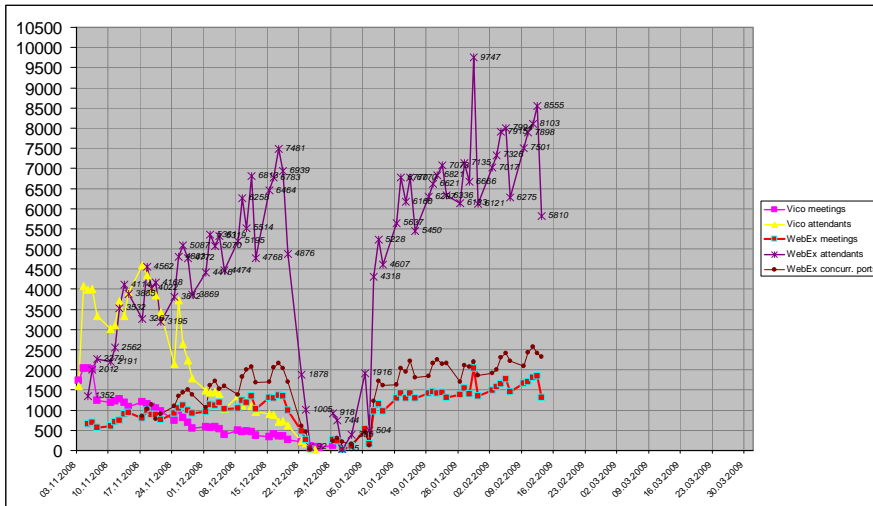
- Virtualization of servers
- Reduction of applications
- Data Center location

## HALO Studios in NSN



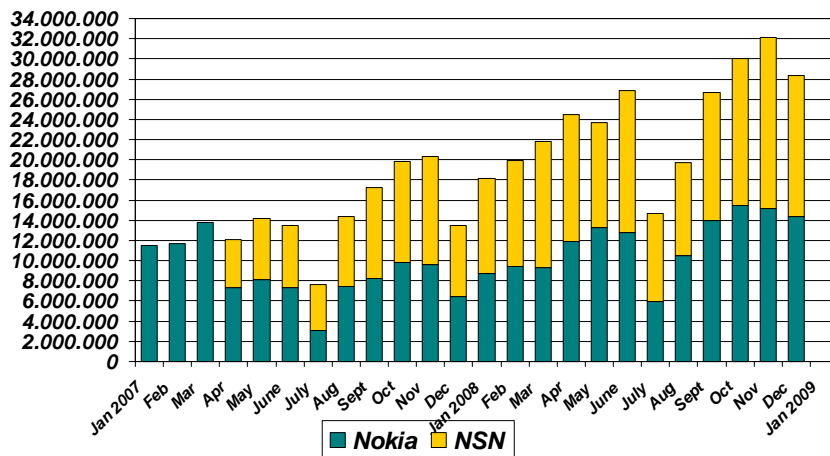


## WebEx usage in NSN

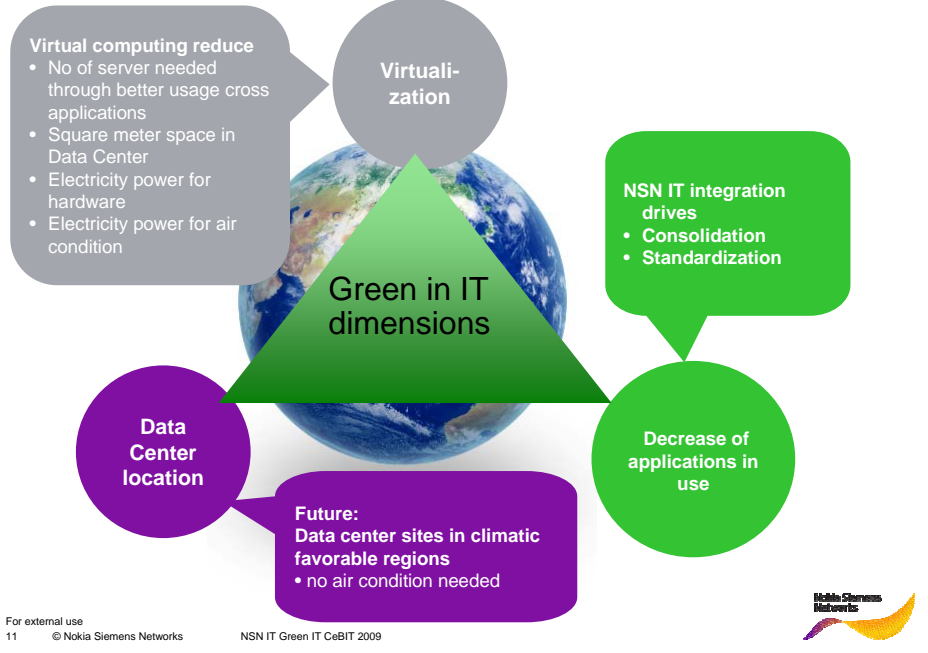


## NSN is using one shared Voice conference solution with Nokia based on VoIP

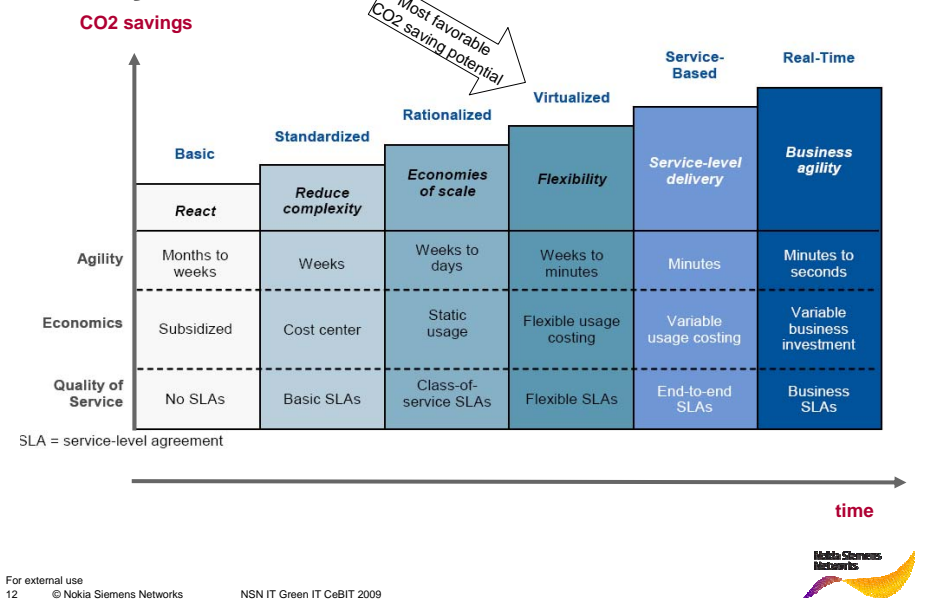
providing local dial-in numbers from 60 countries all over the globe



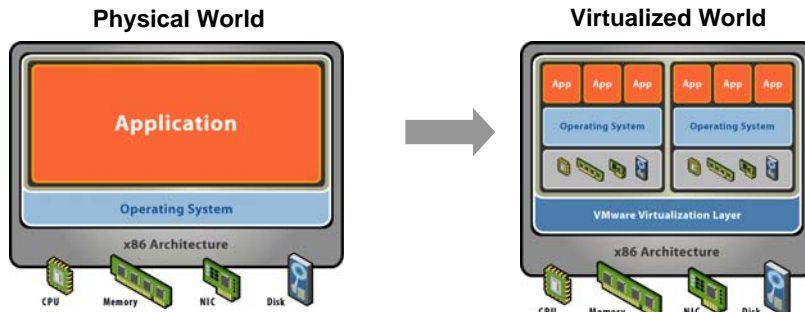
## Green in NSN IT



## Change Vision - Data Center & IT Platforms Maturity Model



## Common Platform (Windows): How does it work?



### Resulting Benefits

- 20 times better utilization of hardware capacity expected – less electrical power needed
- Dynamic resource optimization
- Higher availability (virtual machines can be moved from one physical server to another one WITHOUT service interruption)
- Platform independent within x86 family (run old x86 applications as virtual machines on new x86 hardware)
- Cost Benefits
- Faster provisioning

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## Potential saving blocks (compared to dedicated servers)

### • DC-Infrastructure-related

- electrical power

	used by NSN IT	Power	Total
Server w.o. virtualization	1.200	0,50 KW/h	600 KW/h
Server with virtualization	60	1,00 KW/h	60 KW/h
		<b>Saving</b>	<b>540 KW/h</b>

- DC air conditioning
- DC floor space
- rack space

### • Hardware-related

- Hardware administration & maintenance (Firmware patching, BIOS settings, outage handling, spare parts handling)
- Hardware installation (rack mount, cabling, labeling, burn-in)
- Hardware service contract handling
- Hardware procurement costs
- Hardware ramp-down costs

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## NSN Integration lead to major application ramp downs

April 1<sup>st</sup>, 2007

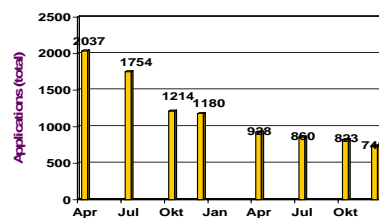
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### Number of Applications:

- Approx 1.300 applications (and instances) ramped down

### Impact in electrical Energy

- Presumption: Two applications / per server
- 0,5 KW/h per server



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**Sustainable savings of  
325 KW/h already achieved**

## Data Center location in climatic favorable region



In case of best fit:  
**No air-condition needed for 330 days / year**



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