

# Energy Efficiency Programs for Desktop Computing: Best Practices

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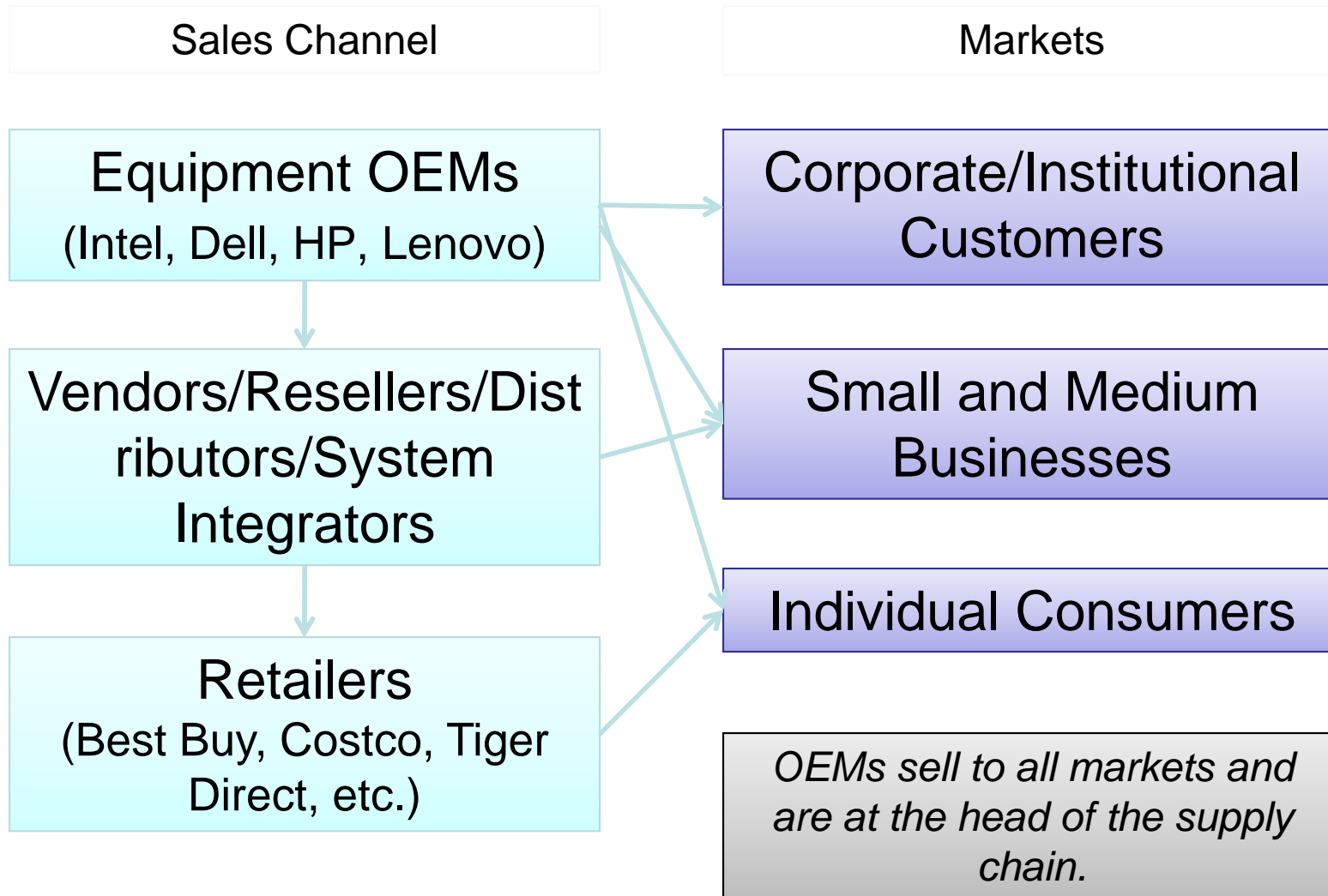
Alan Rose, Intel

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## Despite the move to the “mobile web”...

- There is a large installed base of PCs
  - 2 billion globally, 2014
  - 150 TW-hr
- US annual desktop sales: 28.2 million (2011; eTForecasts)
- *BTW: mobile PC sales are double that*

# Market Picture



# Efficiency Measures

- Efficient equipment
- Equipment refresh
- Move to mobile
- Power management
- Thin client

# Efficient Equipment

(and Power Management and Move To Mobile)

Processor/Model Year	Average Annual Energy Consumption, kWh
<b>6 Year Old Desktop</b> Intel Pentium 4	635
<b>5 Year Old Desktop</b> Intel Pentium 4	658
<b>4 Year Old Desktop</b> Intel Pentium Dual Core	700
<b>3 Year Old PC</b> Intel Core 2 Duo	469
<b>Current Model Desktop</b>	252
<b>Current Model Desktop</b> Power Mgmt Enabled	83
<b>Current Model Laptop</b> Power Mgmt Enabled	51

# Power Management

- Over 90% of desktops have power management settings disabled
- A host of vendors offer specialized software to manage and monitor power mgmt.
- Very conservatively, savings of 200 kWh/year per seat.

# Thin Client

Replaces desktop computers with:



Desktop Computer, 75 – 100 Watts  
Laptop Computer, 10 – 15 Watts  
Thin Client: 4 – 6 Watts

# Thin Client

But remember, this is in the background:





# Best Practices for Utility Programs

- Upstream/midstream incentive program for premium efficiency equipment
  - Only way to bring most influential vendor partners on board
  - Needs participation by significant number of utilities (either regionally or total in US)

# Best Practices Continued

- Direct-to-customer rebate program for power management software
  - Most-offered IT rebate measure by utilities
  - Yes, customers can enable existing power management features of desktop management software, or use free EPA-provided software
  - But this program has been shown to move the market with great cost-effectiveness

# Best Practices Continued

## Calculated Incentives for Thin Client Retrofits

- Savings are dependent on many factors:
  - Age of existing desktop fleet
  - Power management of desktop fleet
  - Power use of thin client devices
  - Power use of servers and comm. eq. to support thin clients
  - Efficiency of data center housing servers
- Risk in providing deemed rebates
- Narrow market applicability
- Good calculation models are available

# Potential Innovative Programs

- Refresh/recycle
  - Capture the advances in energy efficiency of latest generation equipment
  - Difficult program model (are you pulling unused machines from garages!)

# Potential Innovative Programs

- Single user power management software subscription service
  - Users access instructions for setting power management, and download a program that reports energy, cost, and environmental savings
  - Utility counts “enrollments” and claims energy savings

# Call To Action

- Join a midstream/upstream program rewarding premium efficiency equipment purchases
- Provide rebates for desktop power management software
- Consider other measures and innovative programs

# Contact Us

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