

# Meeting the LED Lighting Challenge

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2007 DOE SSL  
Workshop



imagination at work

# GELcore

# GE's LED company... Reinventing light

- Formed 1999...a GE business
- Develop & sell LED-based products
- Signage, Transportation, Specialty & General Illumination
- Global presence: Americas, Europe, Asia

# Laser beam focus on target segments

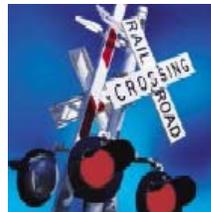
## Signage

Electronic Exterior  
& Interior Architectural



## Transportation

Infrastructure



## Specialty

Task and  
Alternate  
Purpose



## Gen. Illum.

Area Lighting



# Several GELcore differentiators



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## “Application Innovation”

- Lighting DNA
- Experience
- Needs Design →
- Education

## “Technology”

- Ctrs of Excellence
- Optics
- Thermals
- Electronics
- Phosphors

## “Reach”

- GE
- Distribution
- Supplier Network
- Global Support

“Customer - Focus”

six  
6sigma

“Intellectual Property” “Adaptation”



# Wal-Mart

# Use the technology to create value

**Segment: Big Box Retail**

**Key Customers:**



**Needs:**

**Maintenance  
Energy / Conservation  
Merchandising**

**First Entry to  
Retail  
Display**

**Investment:**

**LED Commercial Refrigeration  
GEN 2.0 Retrofit Product  
Design and Application**



# Why target Refrigerated Display?

“Single biggest lighting headache in the store”

## Tough environment for incumbent

40% lumen drop due to cold  
dimming/cycling limits life

## High energy consumption

>360W per 5 door case

## Wasteful light

Diffuse source in directive app.

## High Maintenance Costs

>15% premature failures

<2 year re-lamp cycle

Glass, IR, UV and Hg



# Using key partnerships...contributions enable a market win

## Refrigerated Display

### Partner contribution

- Application Needs
- In-store access for prototypes
- Access to energy, facilities and marketing decision makers
- Application “real” costs

# LED Refrigerated with strong value add

A patent-pending lighting system for low and medium temperature reach-in door merchandisers

## Benefits

Improved product visibility

Reduced energy costs (up to 78%)

Reduced maintenance (+32k hrs life)

More robust & eco-friendly

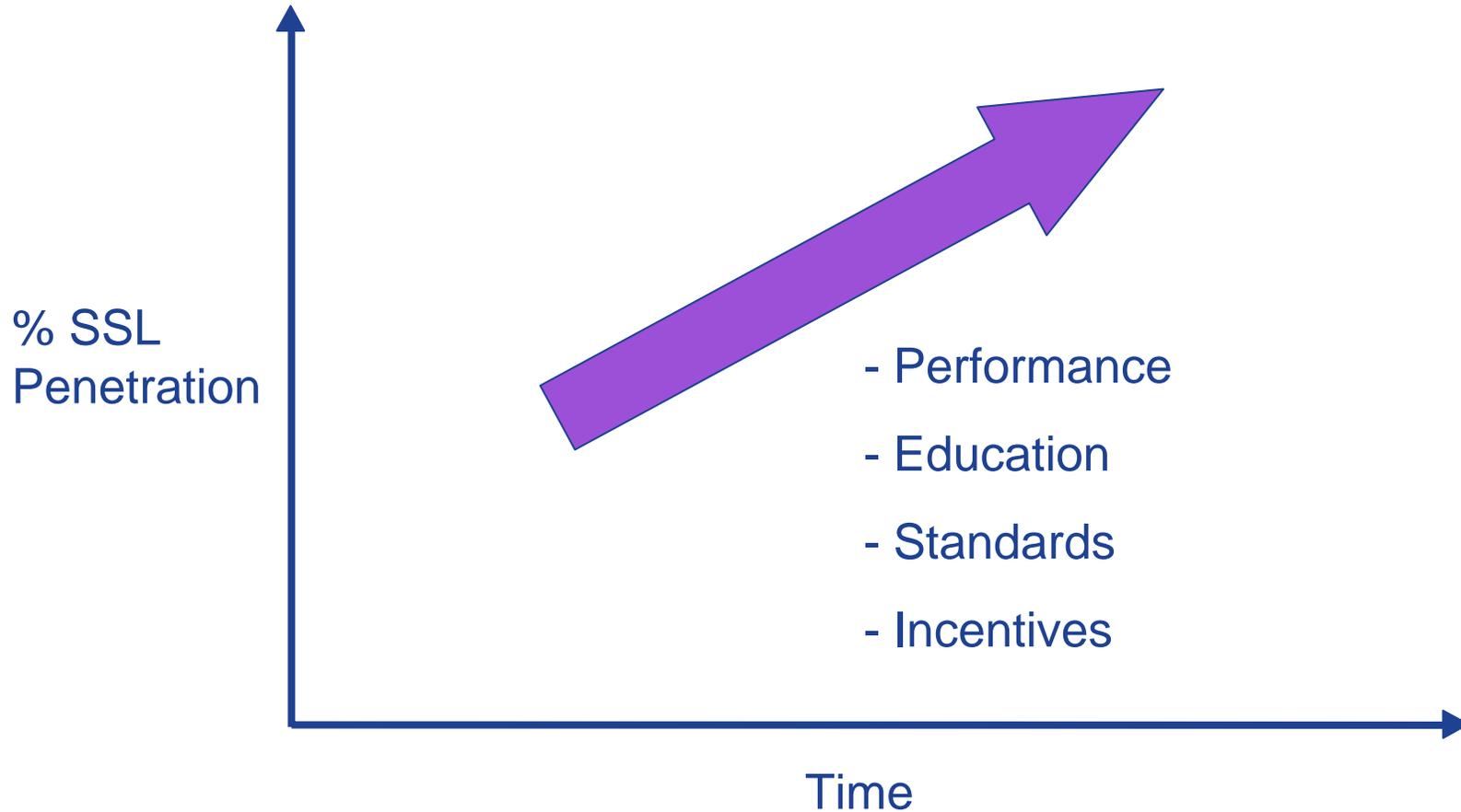


# High impact win... raising awareness

- ✓ Wal-Mart will spend a minimum of \$13MM in over 500 stores
- ✓ \$2.6MM energy-cost savings will reduce CO2 emissions by 35 million pounds annually
- ✓ "GE is a key ally in our effort to develop and deploy technologies that enhance the performance of our stores" states Charles Zimmerman
- ✓ "Our sustainability team and senior management recognize the game-changing impact of GE's cutting-edge refrigerated case solutions" notes Zimmerman. "We look forward to the day, not too many years down the road, when every retailer will follow our lead in pursuit of greater energy savings and environmental benefits."

# Accelerating Adoption

# SSL acceptance in our hands



# Support key adoption drivers

## Performance

- High LPW, low \$/lumen given
- Deliver high, consistent quality white light
- Meet/manage customer expectations & your stated claims

## Education

- First off, simplify terms... utilize accepted vocabulary
- Invest in value selling... turn customers into advocates
- Engage retailers, utilities, government, NGOs in Consumer Education

## Standards

- We need to define early
- Raise the bar while being sensitive to industry capabilities
- Evaluate need for current, niche applications e.g., Signage

## Incentives

- Have rebates accessible from introduction
- Carefully consider regulatory levers e.g., California