

The Key Trends Shaping Energy and Utilities in 2011

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Understanding business and technology trends is crucial for creating a successful IT strategy and is a key requirement in an enterprise architecture planning process.

Energy and utility companies must align their IT investments with regulatory initiatives, market restructuring, environmental concerns, energy sustainability, infrastructure reliability and compliance needs.

Key Issues

1. What are top business issues and technology trends impacting utility planning and operations?
2. How should IT departments respond to these issues and trends?
3. How to assess technology viability and maturity for investment purposes.

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Top Ten Trends

Business Trends

1. Energy Supply Security and Independence
2. Renewable Sources
3. Environmental Concerns
4. Financial Crisis Fallout
5. Security
6. Merger Acquisition and Divestments
7. Aging Assets
8. Aging Workforce
9. The Smart Grid
10. Energy Technology Consumerization

Technology Trends

1. Communication Technology
2. Mobile Technology
3. Business Intelligence and Analytics
4. Web 2.0 and Social Computing
5. Electric Vehicles
6. Energy Storage
7. Advanced Metering Infrastructure
8. SaaS and Cloud Computing
9. IT and OT Convergence
10. Demand Response

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Portfolio Management to Identify Relevant Key Trends for Your Business

- Run the business:
 - Continue to provide energy as a "Cloud Service"
- Grow the business:
 - Acquire new customers in competitive energy markets
- Transform the business:
 - Address energy sustainability concerns, enable new energy provisioning business models



What are the Run / Grow / Transform Priorities for your Business?

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These trends and issues can be composite

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Technology Trends

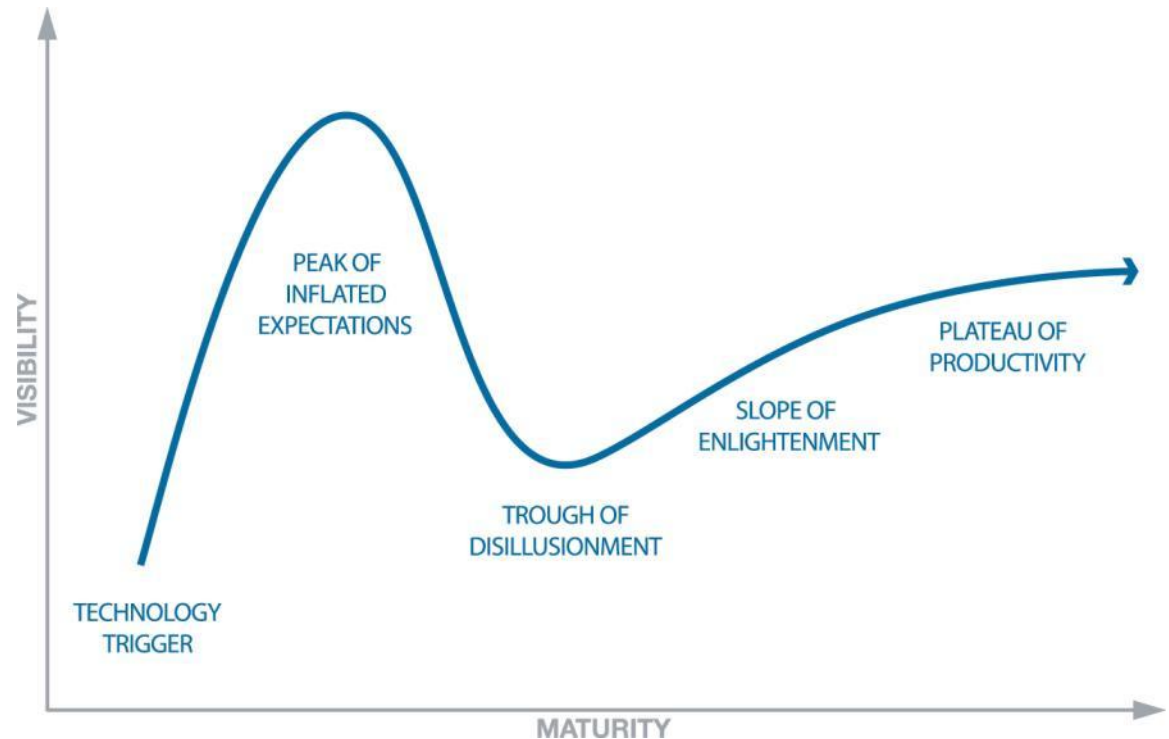
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Gartner Uses the Hype Cycle to Predict Time to Maturity and Benefit

Used to understand which technology to use, and when



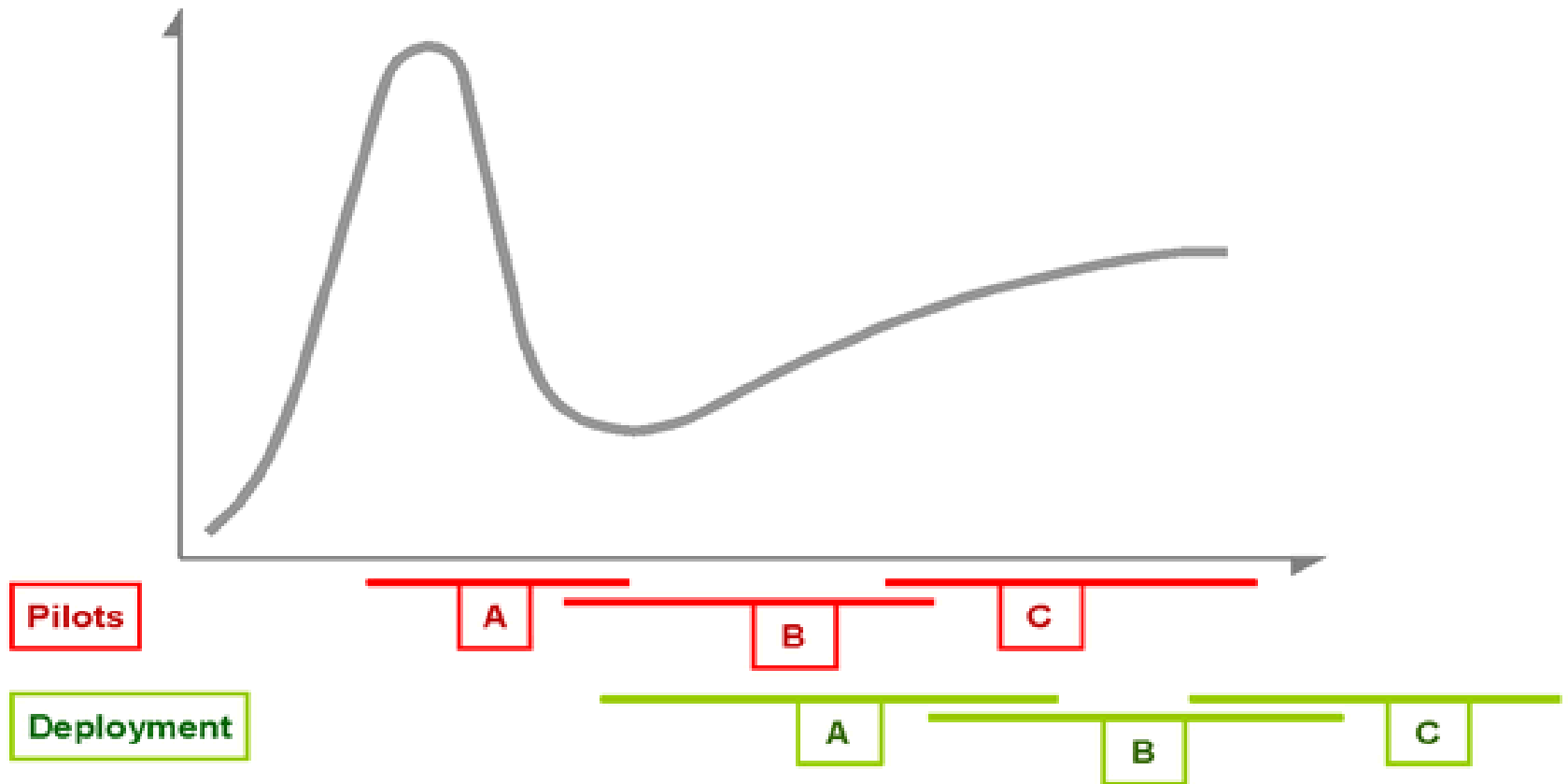
Gartner Covers Both Vertical and Horizontal Technologies

- Energy & Utilities Offers Four Hype Cycles
 - Utility Industry IT & Business Processes
 - Smart Grid Technologies
 - Utility Industry Operational Technologies
 - Emerging Energy Technologies
- Other Vertical Industries Offer Relevant Material:
 - Vehicle-Centric Information and Communication Technologies (Vehicle ICT)
 - Transportation

Horizontal Technologies - Hype Cycles of Interest

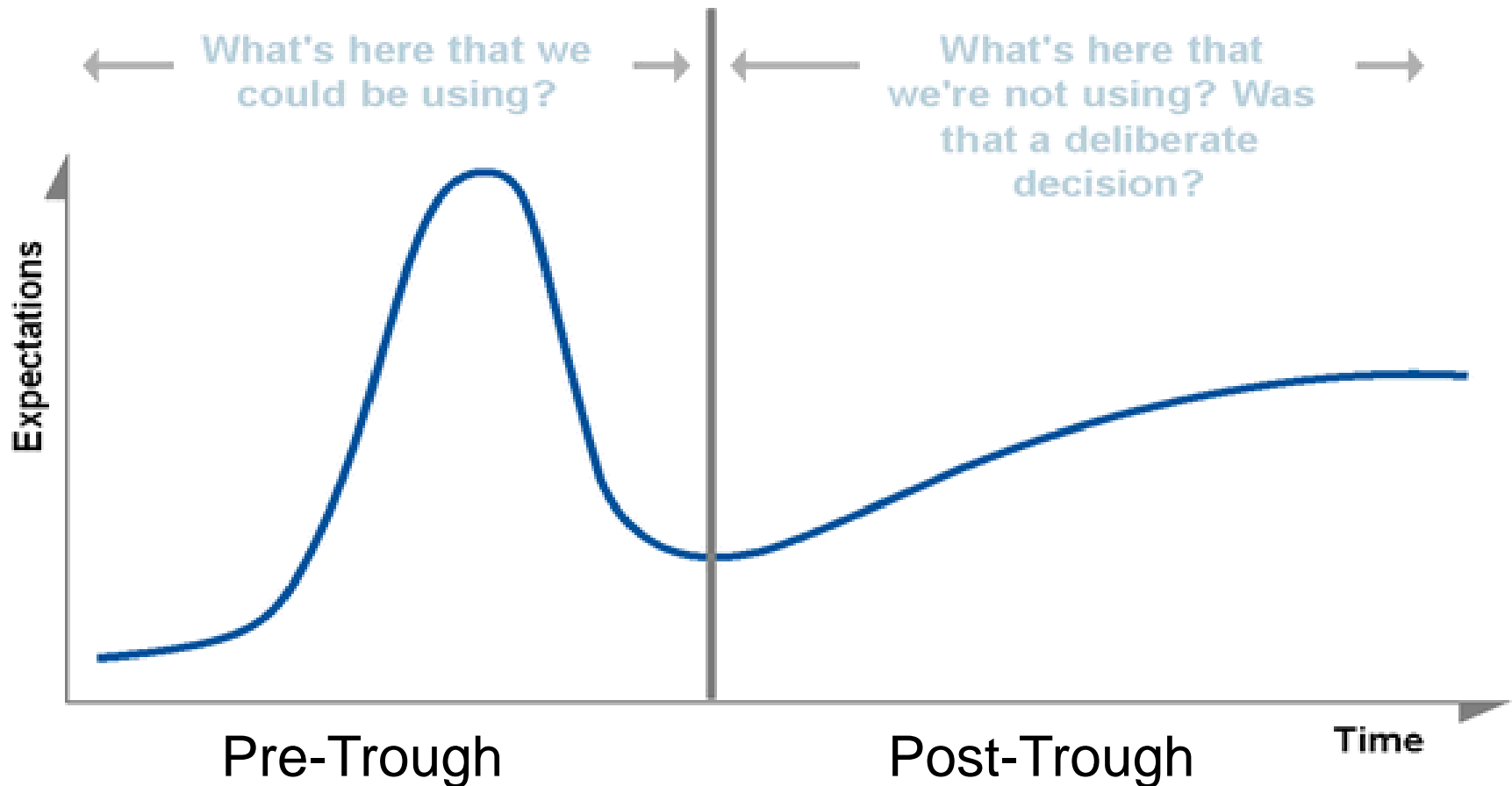
- Also marked for E&U Distribution through the Gartner Portal:
 - Emerging Technologies
 - Solar Energy
 - Wireless Devices, Software and Services
 - Sustainability and Green IT
 - Data Center Power and Cooling Technologies
 - Smart City Technologies and Solutions
 - Communications Service Provider Infrastructure
 - Business Continuity Management and IT Disaster Recovery
 - Server Technologies
- Others of Interest:
 - Human-Computer Interaction
 - Mobile Device Technologies

Adoption Patterns by Type A, Type B and Type C Organizations



Key Hype Cycle Questions

Use Hype Cycles to discuss candidate innovative technologies.

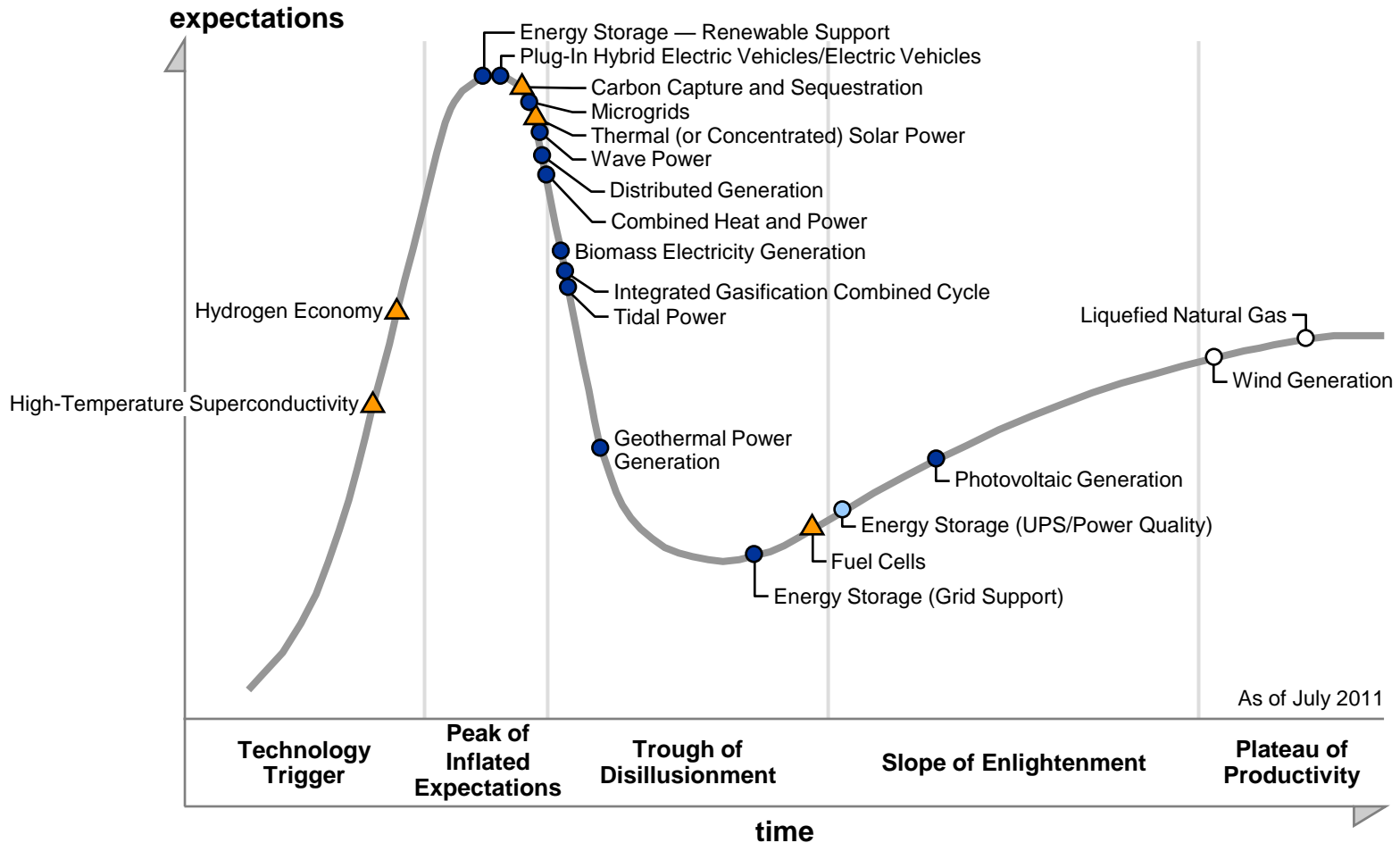


Using the Priority Matrix

benefit	years to mainstream adoption			
	less than 2 years	2 to 5 years	5 to 10 years	more than 10 years
transformational	Invest aggressively if not already adopted	Conservative (Type C) investment profile	Moderate (Type B) investment profile	Aggressive (Type A) investment profile
high	Conservative (Type C) investment profile	Moderate (Type B) investment profile	Aggressive (Type A) investment profile	Invest with caution
moderate	Moderate (Type B) investment profile	Aggressive (Type A) investment profile	Invest with caution	Invest with extreme caution
low	Aggressive (Type A) investment profile	Invest with caution	Invest with extreme caution	Invest with extreme caution

As of July 2011

Emerging Energy Technologies

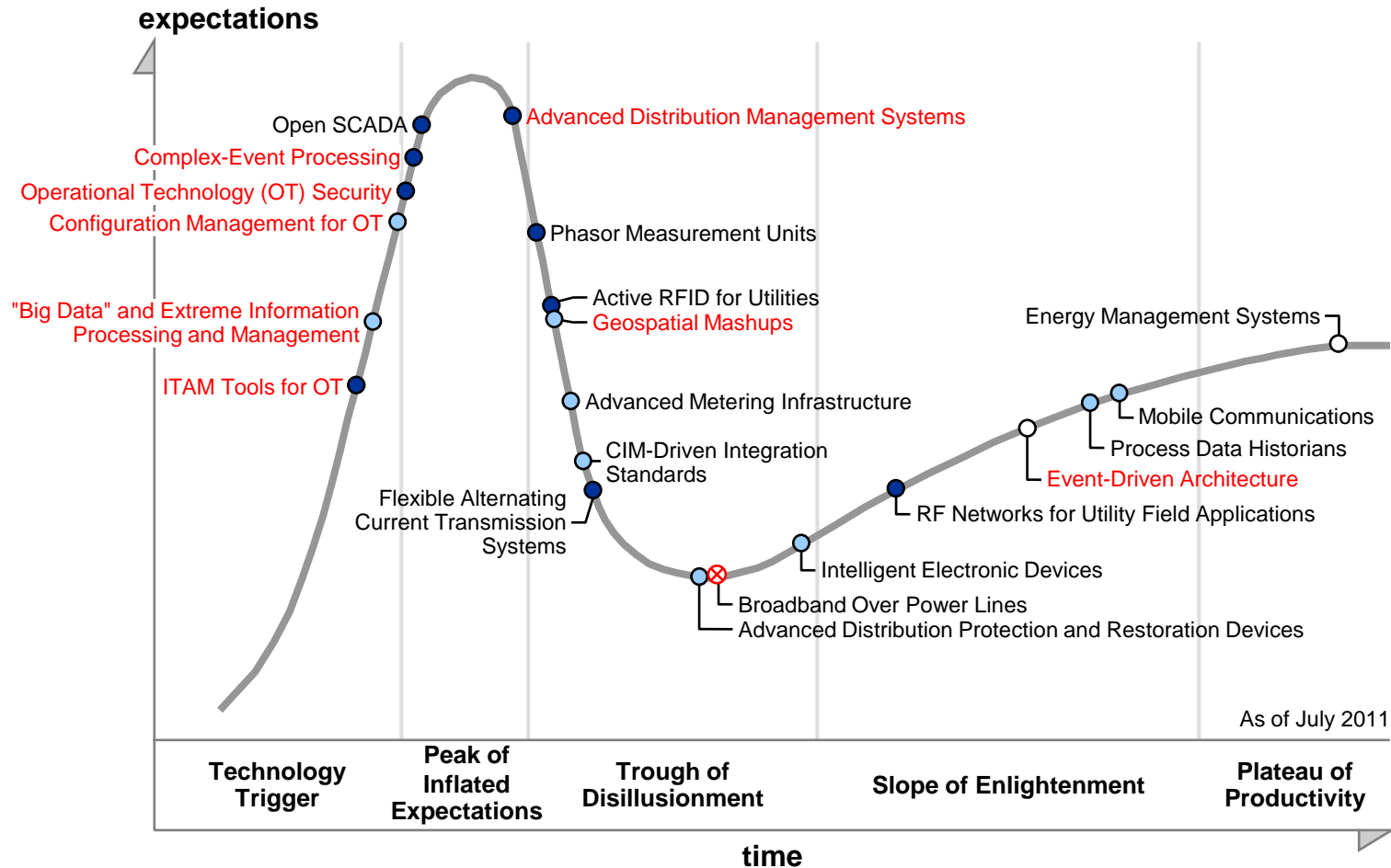


Years to mainstream adoption:

- less than 2 years
- 2 to 5 years
- 5 to 10 years
- ▲ more than 10 years
- ⊗ obsolete before plateau

No Technologies Added This Year

Utility Industry Operational Technologies



Years to mainstream adoption:

○ less than 2 years

● 2 to 5 years

● 5 to 10 years

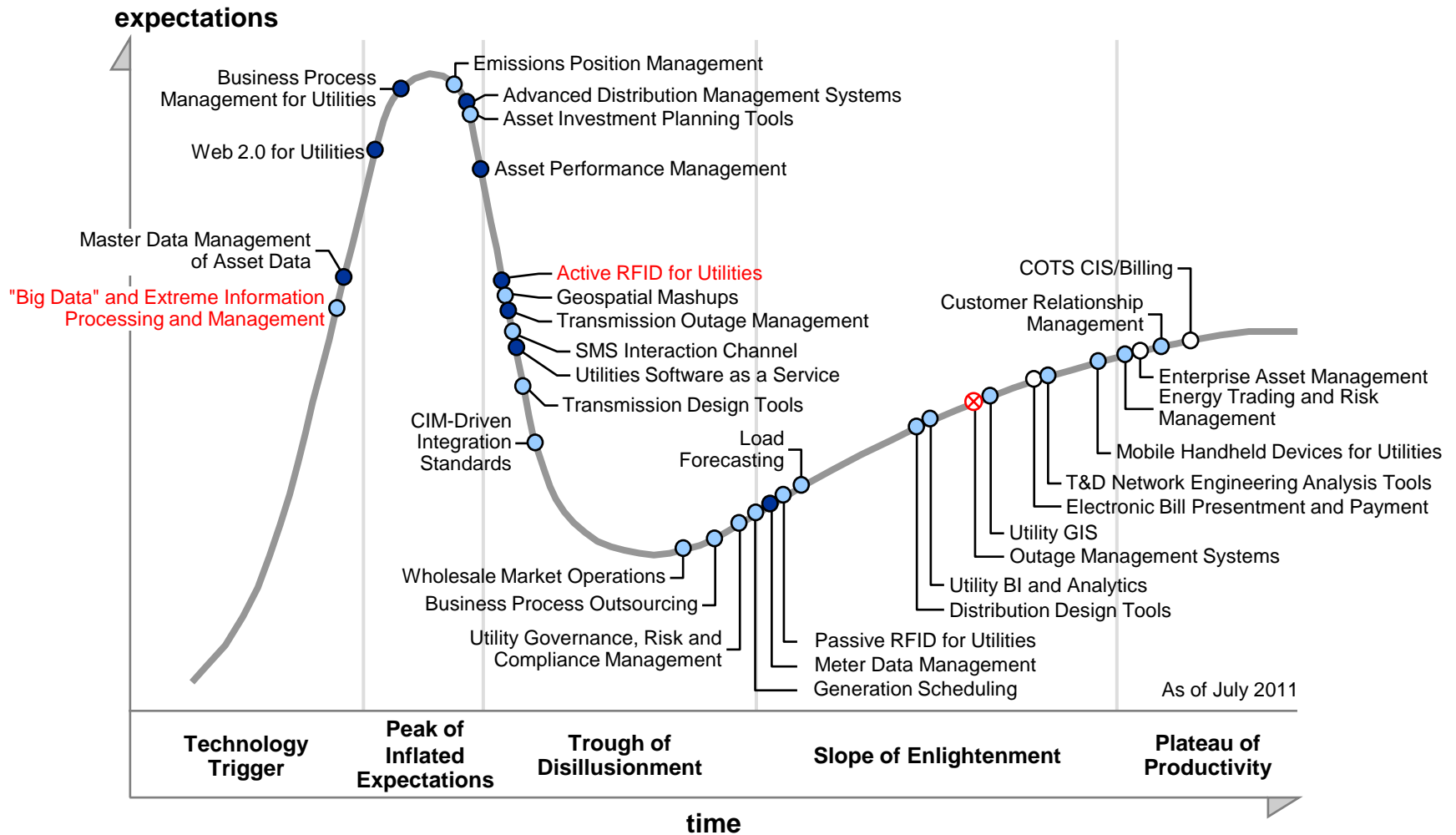
▲ more than 10 years

○ obsolete

⊗ before plateau

Red Text = Technology Added This Year

Utility Industry IT & Business Processes

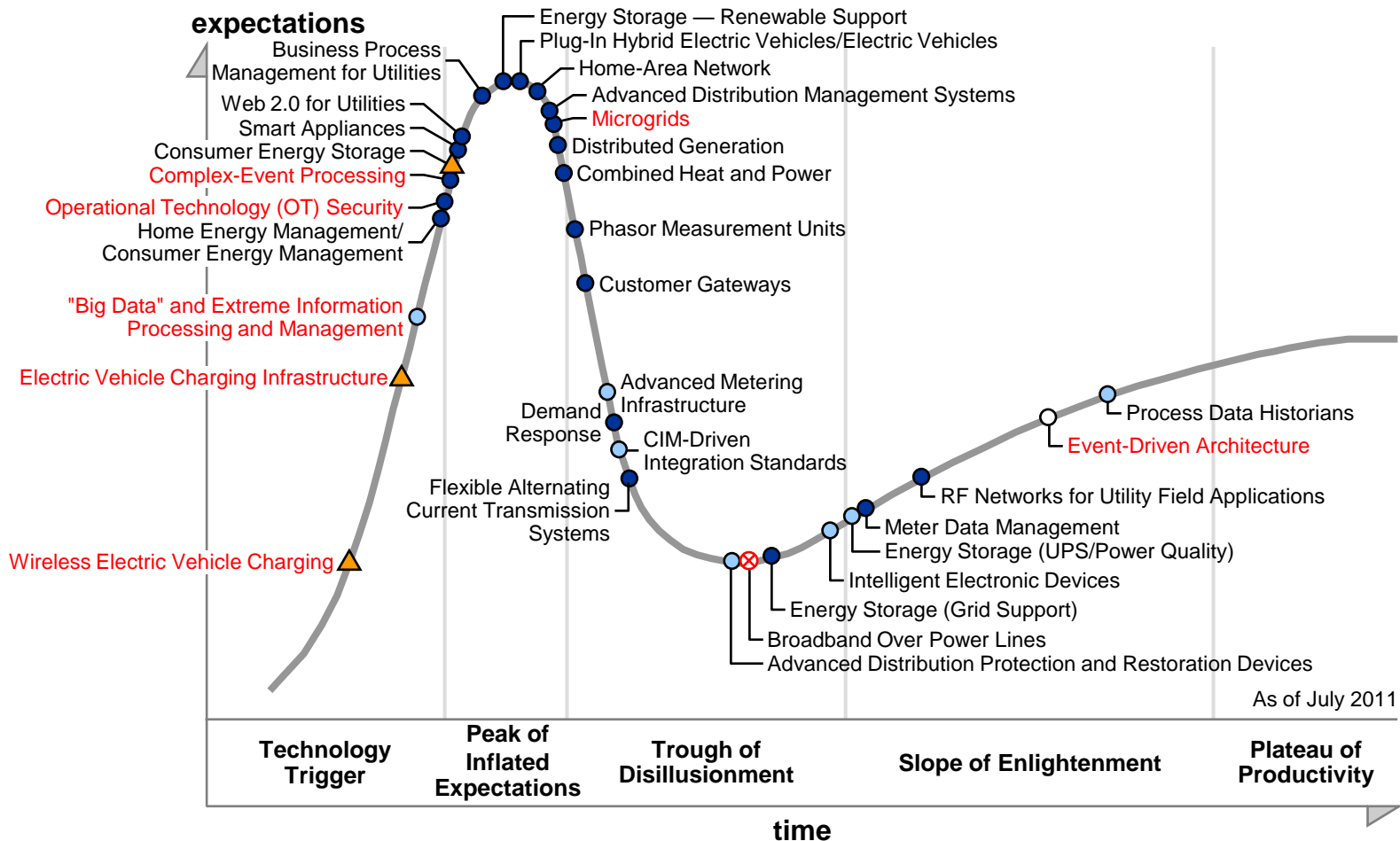


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Smart Grid Technologies



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Smart Grid Technologies

benefit

years to mainstream adoption

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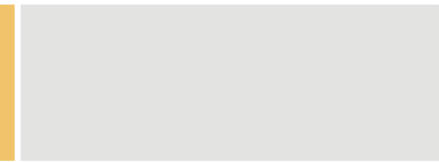
more than 10 years

transformational



Advanced Metering Infrastructure
"Big Data" and Extreme Information Processing and Management

Complex-Event Processing
Demand Response
Distributed Generation



high

Event-Driven Architecture

Energy Storage (UPS/Power Quality)

Advanced Distribution Management Systems
Business Process Management for Utilities
Combined Heat and Power
Customer Gateways
Energy Storage — Renewable Support
Flexible Alternating Current Transmission Systems
Home Energy Management/Consumer Energy Management
Home-Area Network
Meter Data Management
Operational Technology (OT) Security
Phasor Measurement Units
Plug-In Hybrid Electric Vehicles/Electric Vehicles
Smart Appliances
Web 2.0 for Utilities

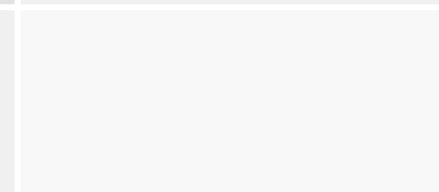
Consumer Energy Storage
Electric Vehicle Charging Infrastructure
Wireless Electric Vehicle Charging

moderate

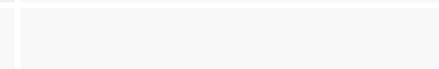
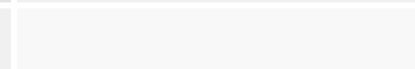
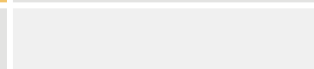
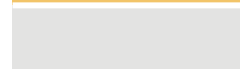


Advanced Distribution Protection and Restoration Devices
CIM-Driven Integration Standards
Intelligent Electronic Devices
Process Data Historians

Energy Storage (Grid Support)
Microgrids
RF Networks for Utility Field Applications



low



As of July 2011

Applying This to your Strategy and Plans

Monday Morning:

- Prioritize and link issues and technologies applicable to you business (Run / Grow / Transform)
- Think about your organization type (A, B, or C).
- Consider how Hype Cycles can help you pinpoint technology decisions.

Over the Next Six Months:

- Cut down the business issues to those for your "world." Not all will apply equally.
- Factor business issues and technology trends into ongoing planning
- Look beyond traditional information sources for investment planning (Sector and Geography)

Related Gartner Research

- ➔ **Understanding Gartner's Hype Cycles, 2011**
Jackie Fenn, Mark Raskino
- ➔ **Management Update: Top 10 Business Trends Impacting the Utility Industry in 2011**
Zarko Sumic, Keith Harrison, Kristian Steenstrup,
Randy Rhodes, Earl Perkins
- ➔ **Management Update: Top 10 Technology Trends Impacting the Energy and Utility Industry in 2011**
Kristian Steenstrup, Zarko Sumic, Keith Harrison,
Randy Rhodes
- ➔ **Key Issues for the Energy and Utilities Industry in 2011**
Zarko Sumic