

# *Global IT Convergence Trends & Prospects*

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# Three Laws are converging



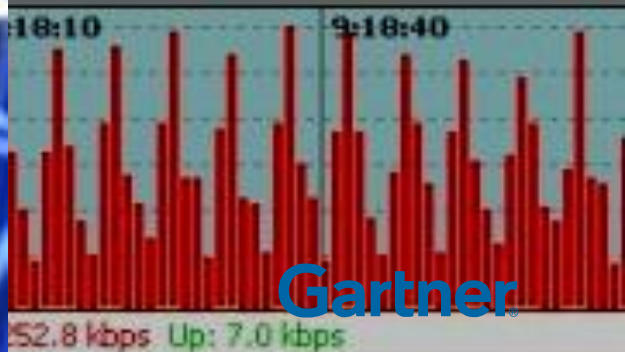
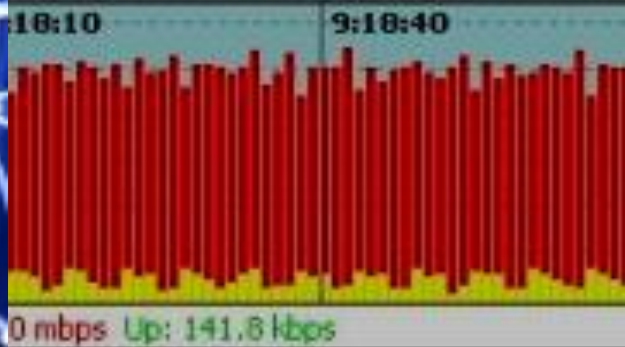
**Moore's Law** – more computing power



**Metcalfe's Law** – more valuable networks



**Gilder's Law** – more communication bandwidth



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# Changing the way the world works

- 1 Billion PCs
- 2 Billion Bluetooth
- 4 Billion Mobile Phones
- 10 Billion Internet devices
- 60 Billion “Smart” Devices
- 250 billion emails every day, plus
- 15 Petabytes of new data every day

In less than 20 years, the Internet has become the default channel of communication for almost 1/3<sup>rd</sup> of the world's population!

# Changing the way the world talks

The image is a collage of three web pages. On the left is the Martha Stewart Living website, featuring a search bar, navigation tabs for 'FOOD', 'ENTERTAINING', and 'HOLIDAYS', and a 'Community' section with various article teasers. In the center is the Sony Style website, showing a navigation menu with categories like 'Computers', 'Cameras & Camcorders', and 'TV & Home Entertainment', along with a search bar and a 'Backstage 101 Community' banner. On the right is the Cisco Learning Network website, which includes a navigation menu with 'Careers', 'Connections', 'Certifications', 'Learning Centre', and 'Our Store', a search bar, and a large banner for 'Cisco Learning Network Reach For The Stars' with a 'Register Now!' button. Below the banner are sections for 'CERTIFICATIONS SPOTLIGHT' and 'TECHNOLOGY SPOTLIGHT', and a 'Recent Discussions' section.

By 2012: Facebook will become the hub for social network integration and web socialization

# Changing the way the world computes



Cloud services today tend to be standardized, elastic but in "chunks," and monolithic in nature.

By 2012:

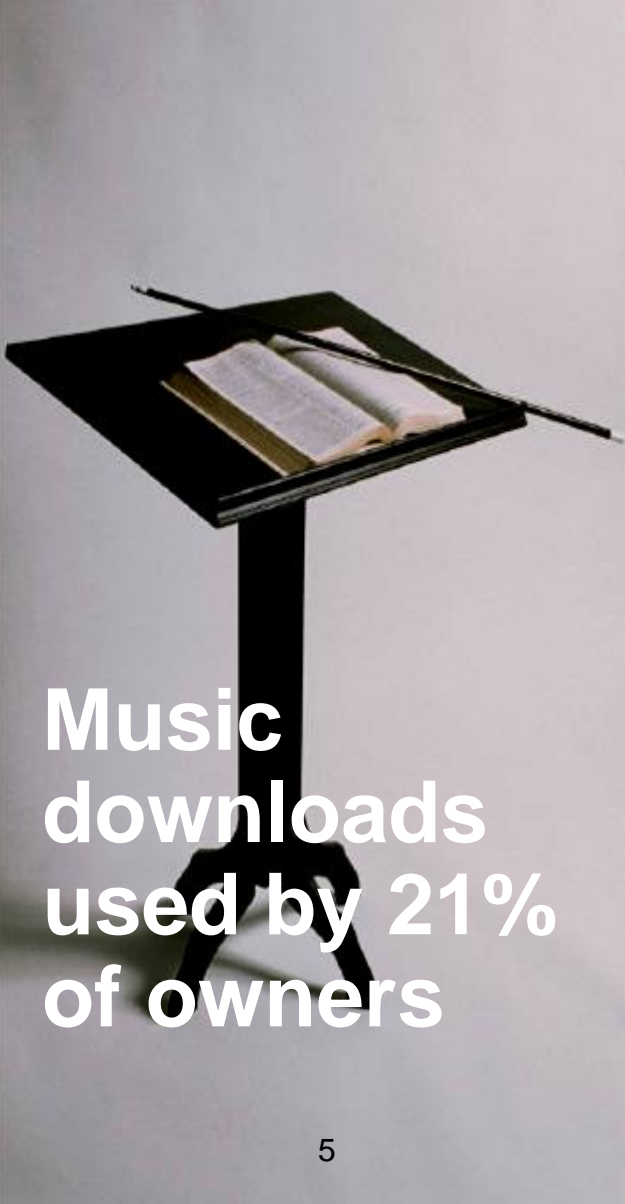
- ◆ 20% of businesses will own no IT assets
- ◆ India-centric companies will represent 20% of the leading cloud aggregators

In the future, we will see custom service levels, rapid and granular elasticity, and open, federated markets of services.

# Mobility and Content are converging



41,067,800  
smartphones  
sold in 3Q09



Music  
downloads  
used by 21%  
of owners



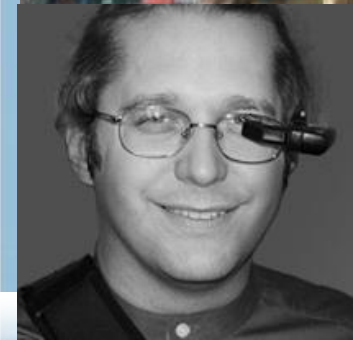
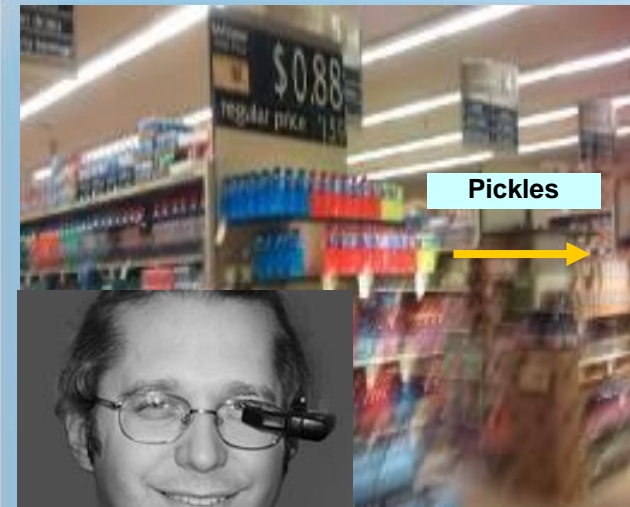
New revenue  
models being  
built around  
TV and movie  
downloads

# Linking the Real and Digital Worlds

- Wearable or "glanceable" interface
- Context-based information at point of decision/action
- Contextual information includes location, orientation, time, proximity to other people or objects, history, emotional state
- Digital "person" Who is the REA



By 2015 Internet marketing will be regulated, covering more than \$250 billion in internet marketing spend



# Turing the Automobile into a network of services





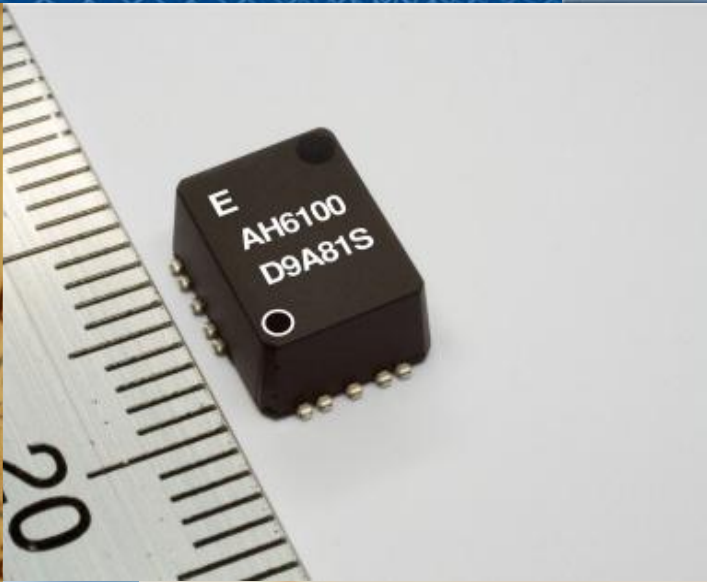
# Increasing Medical provider availability

- Telephonic care
- Video conferencing
- Instant messaging
- Text messaging
- Social networks

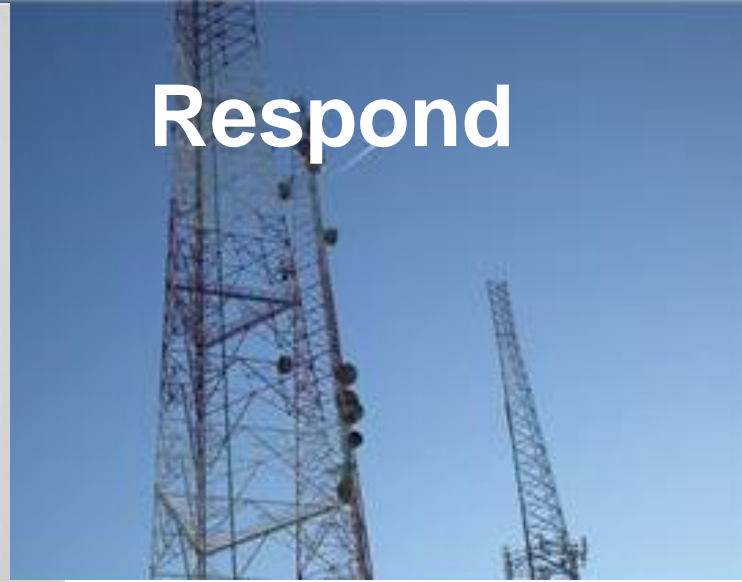


# Location and Sense are converging

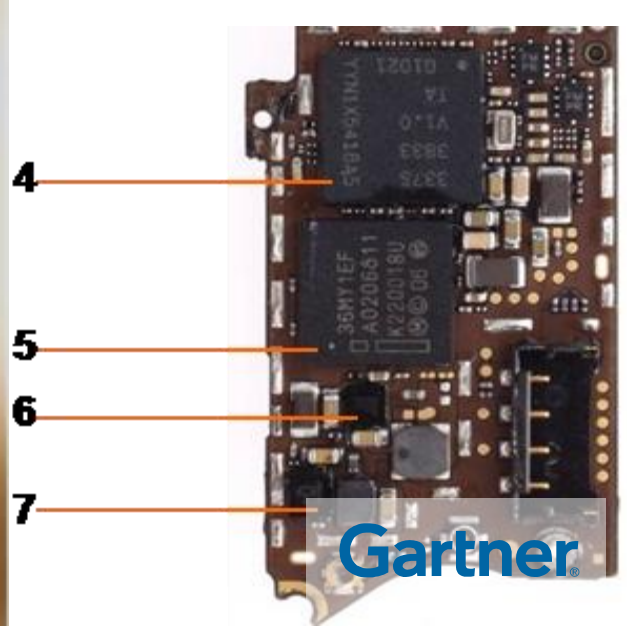
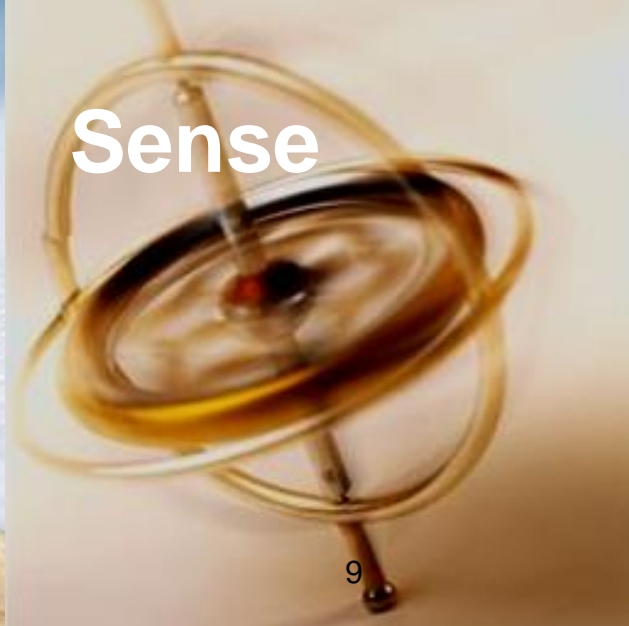
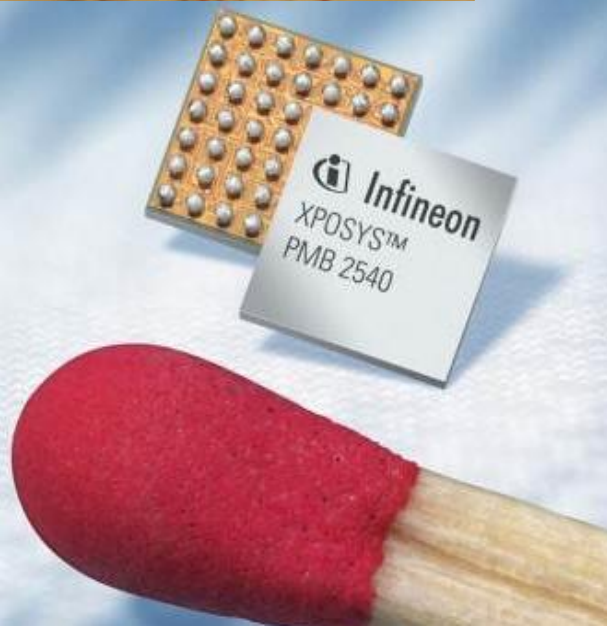
Locate



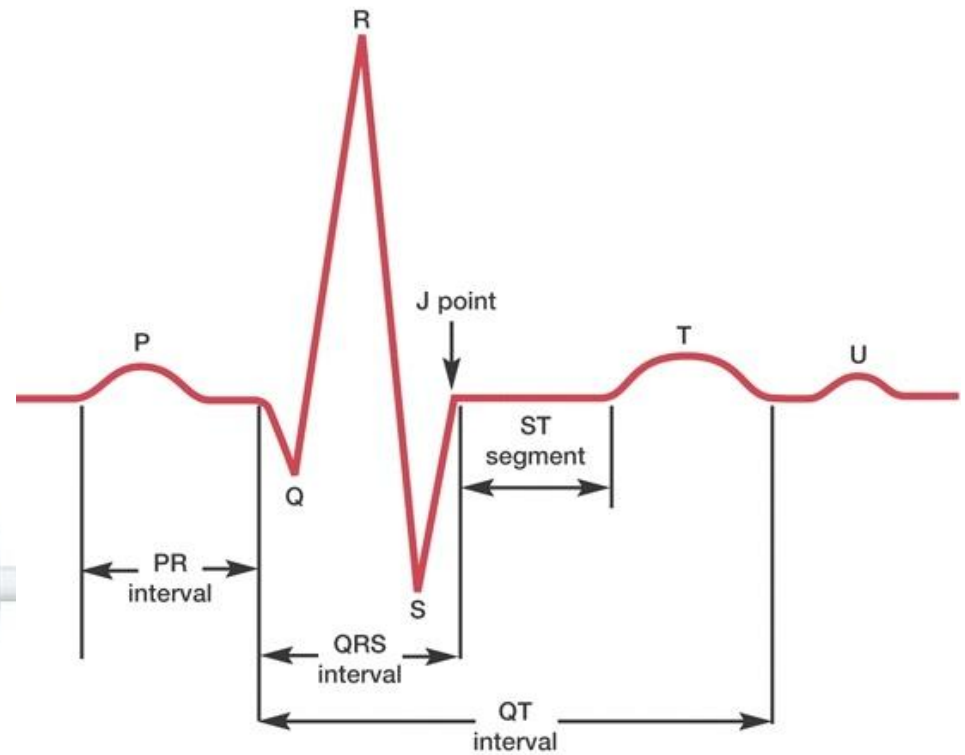
Respond



Sense



# Leading to Earbuds that monitor your heart



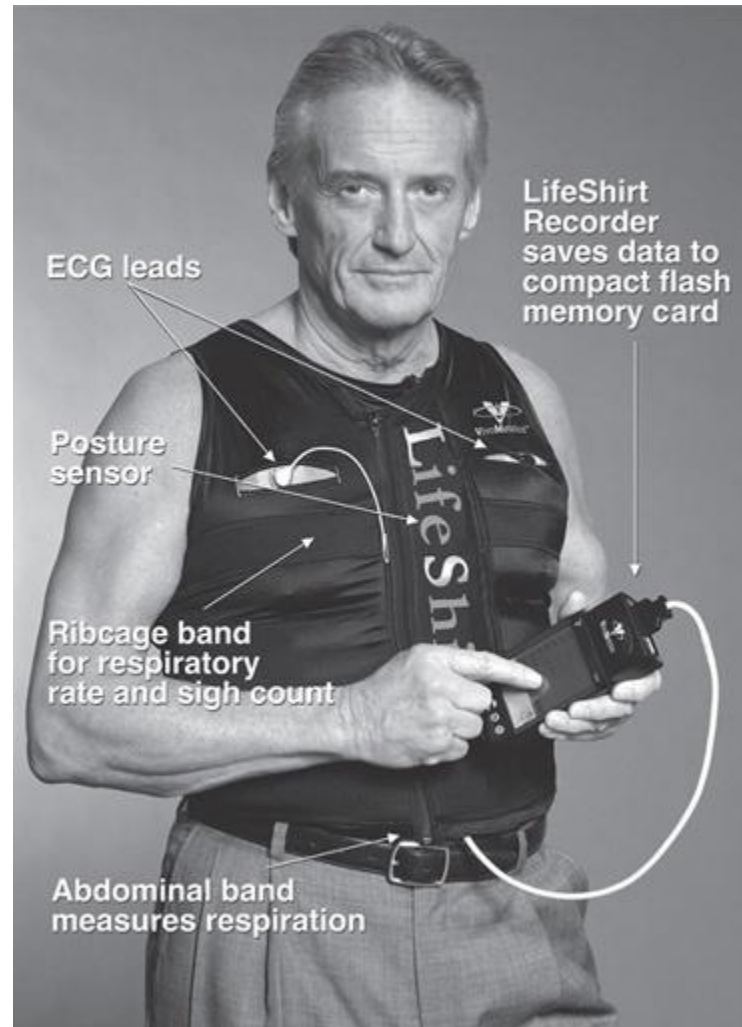
# Leading to Vests that monitor your health

## Monitoring:

- Home and mobile health monitoring
- Remote intensive care unit

## Diagnosis:

- Teleradiology
- Remote ECG monitoring
- Teledermatology
- Teleretinal imaging
- Telestroke
- Telepathology



## Triage:

- Medical call centers

## Consultation:

- E-visits
- Video visits
- Telepharmacy
- Clinical kiosks

## Procedure:

- Telesurgery
- Healthcare-assistive robots

# Leading to Mobile technologies that drive energy and utility performance

- Optimize and track crew work schedules and routing (increased wrench time)
- Transferring field information (inspection, maintenance, construction red lines) using mobile devices is more efficient and less error-prone than paper
- Enable real-time workforce, asset condition assessment (e.g., storms and major events), and inventory optimization
- Reduce potential fines/lost revenue from SLA/regulatory/customer dissatisfaction
- Drive greater value from IT systems by improving enterprise information management (data quality)



***Operational performance is enhanced by integrating device-enabled field forces with the IT enterprise***

# Power distribution Efficiency, Security and Sustainability are converging

**Efficiency**



**Security**



**Sustainability**



# Increasing demand for Intelligent Grids

Innovative use of communications, information and energy technologies to create an electric delivery system of the future that is:

- **Self-healing** and **adaptive**
- **Interactive** with consumers and markets
- **Empowering** to customers
- **Optimized** to make the best use of resources and equipment
- **Predictive** rather than reactive, to prevent emergencies
- **Integrated**; merging monitoring, control, protection, maintenance, EMS, DMS, DG
- **More secure** from attack



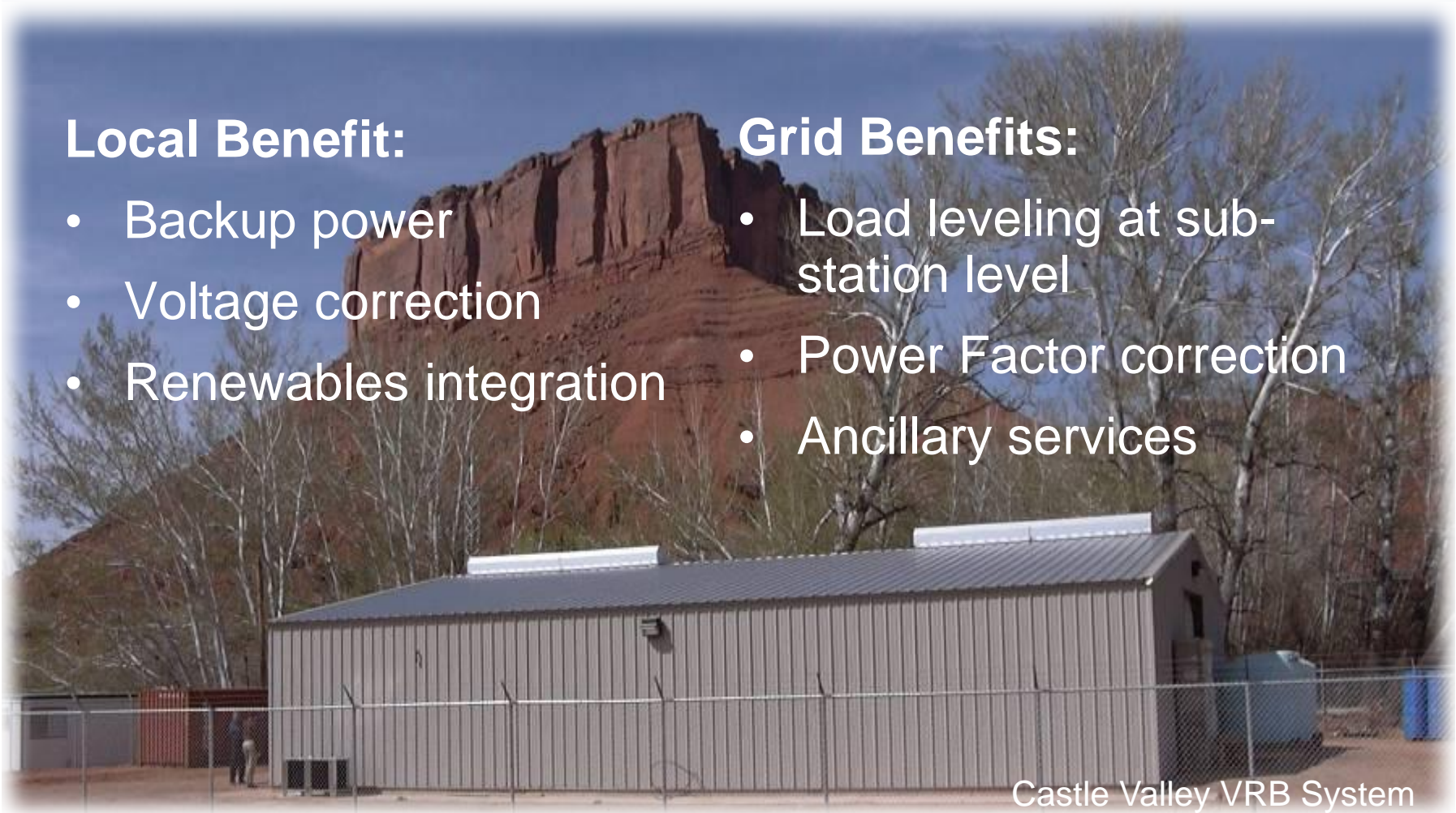
# Increasing demand for local Energy Storage

## Local Benefit:

- Backup power
- Voltage correction
- Renewables integration

## Grid Benefits:

- Load leveling at sub-station level
- Power Factor correction
- Ancillary services



Castle Valley VRB System



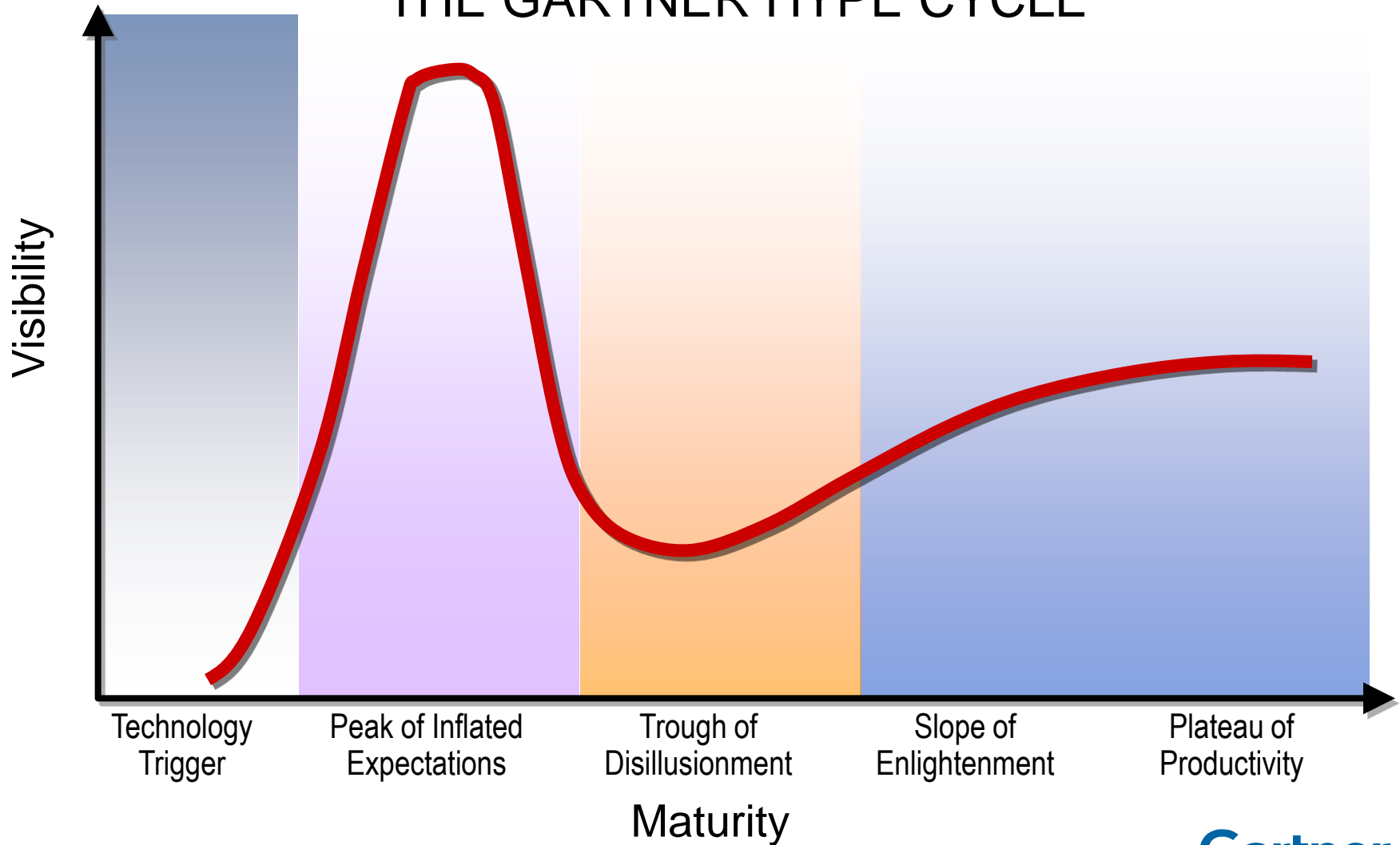
# Increasing demand for Renewable Energy

**Public and Political pressure creates technical challenges, and business innovation.**



# Timing of introduction of emerging technologies is critical to their success

## THE GARTNER HYPE CYCLE



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