Driving Innovation Through Technology: Top Trends, New Attitudes and Next Practices

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SC GMIS, Charleston

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"The future is already here, it's just not evenly distributed."

— *William Gibson*

Photo: Midnightzulu

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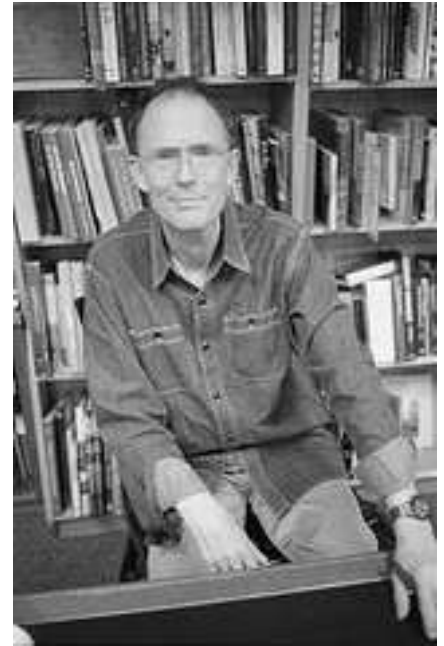
Technology Trend — the Internet of Things

Not a single technology, but a concept enabled by multiple technology advances

- Driving the Trend: Embedded sensors in devices and objects, image recognition, augmented reality, Near Field Communication.

- Social Impact: Situational decision support and learning, (even) more transparency.

- Business Opportunities: Real-time decision support for customers and employees; remote sensing, services on top of connected products.

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Technology Trend —
Real-Time Predictive Analytics
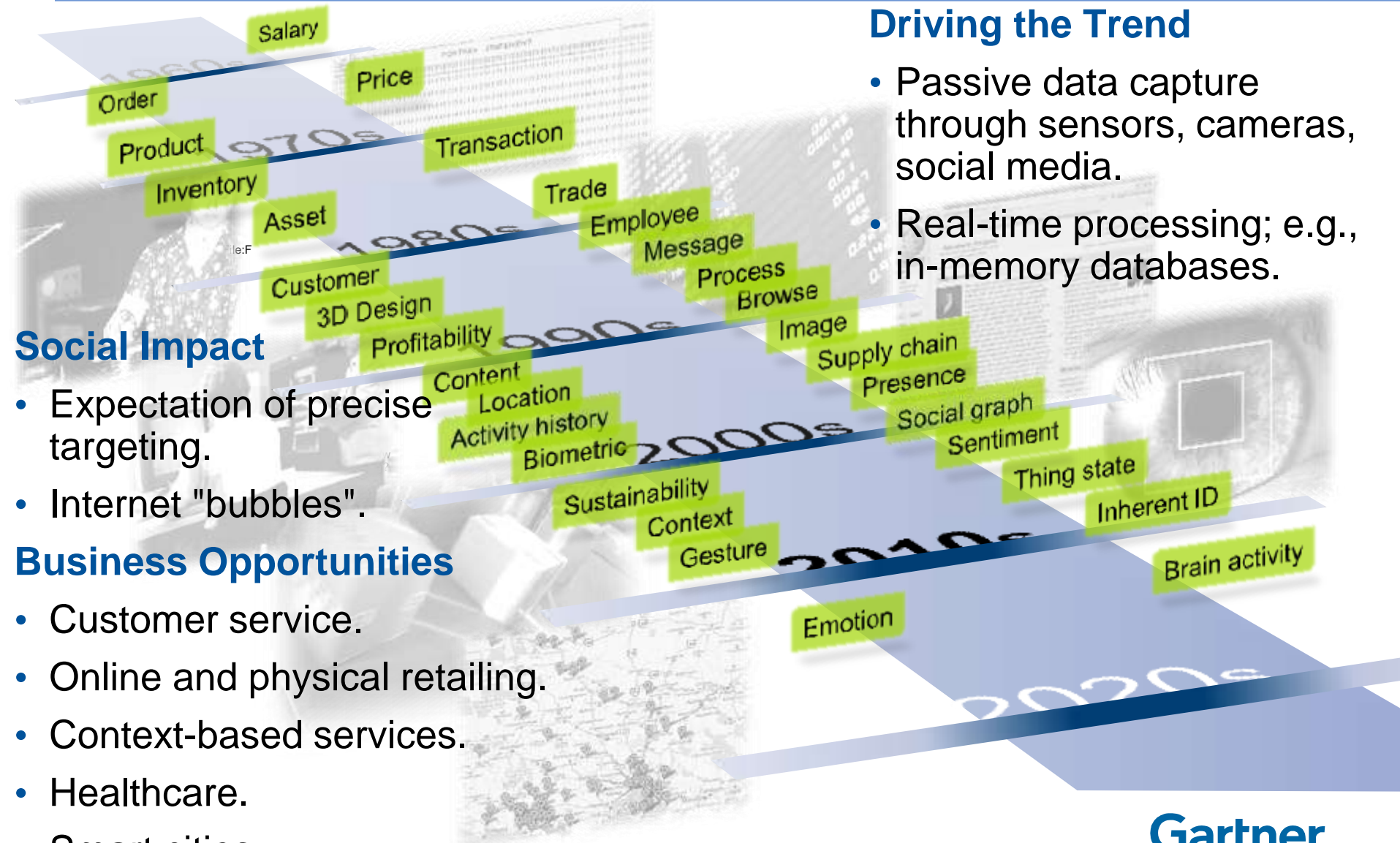

Driving the Trend

- Passive data capture through sensors, cameras, social media.

- Real-time processing; e.g., in-memory databases.

Social Impact

- Expectation of precise targeting.

- Internet "bubbles".

Business Opportunities

- Customer service.

- Online and physical retailing.

- Context-based services.

- Healthcare.

- Smart cities.

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# Technology Trend — Natural User Interaction

Driving the Trend

- Consumer-grade touch and gesture recognition: media tablets, Kinect.

- Large-scale commercialization of screen technologies: OLED, e-paper, 3D.

- Machine learning for natural language and image analysis.

Source: IBM

Social Impact

- Natural language: virtual advisors and friends.

- Screens and gesture: interactive and contextual ambiance.

Business Opportunities

- Natural language: medicine, legal, government, helpdesk, e-commerce, business intelligence.

- Screens and gesture: retail, hospitality, control centers.

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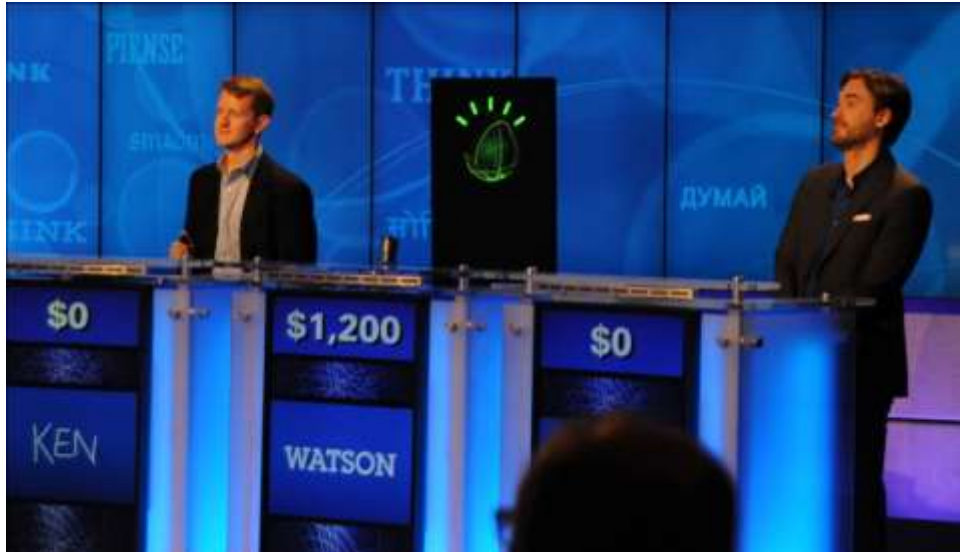
Technology Trend —
For Less Than $10,000, How About…

Source: Z Corporation

Your very own 3D printer

- **Drivers:** Price, range of materials.

- **Social Impact:** Small business growth in custom designs, decentralization of manufacturing and spare parts.

- **Business Opportunities:** Focus on IP, not products, logistics process transformation; medical and dental.

Or your very own avatar

- **Drivers:** Price, laser navigation for flexible movement.

- **Social Impact:** Low-cost remote visits with mobility.

- **Business Opportunities:** Remote consultations, warehousing, security, high-cost infrastructure.
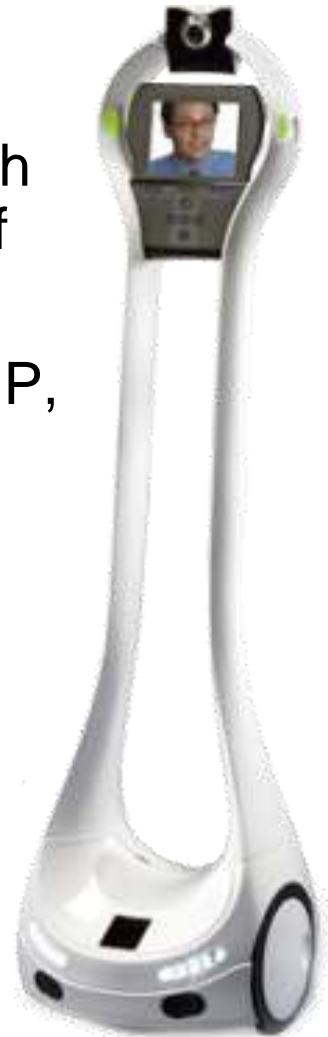
Source: VGo

Why Do We Need Innovation Management?

- **Counter hype**- and personality-driven adoption by keeping an eye on multiple opportunities simultaneously and prioritizing the options.

- Identify and drive the **game-changing opportunities** that would otherwise fall between the cracks.

- Identify and **remove structural obstacles** that impede innovation.

- **Educate** the broader organization with a consistent view of innovation.

- **Coordinate** innovation activities among disparate corporate groups and departments.

- Help the organization **transfer lessons**, build on successes and avoid duplicate efforts.

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Hype Cycle of Emerging Technologies

expectations

Internet TV
NFC Payment
Activity Streams
Private Cloud Computing
Wireless Power
Social Analytics — Augmented Reality
Group Buying — Cloud Computing
Gamification — Media Tablet
3D Printing — Virtual Assistants
Image Recognition
Context-Enriched Services — In-Memory Database Management Systems
Speech-to-Speech Translation
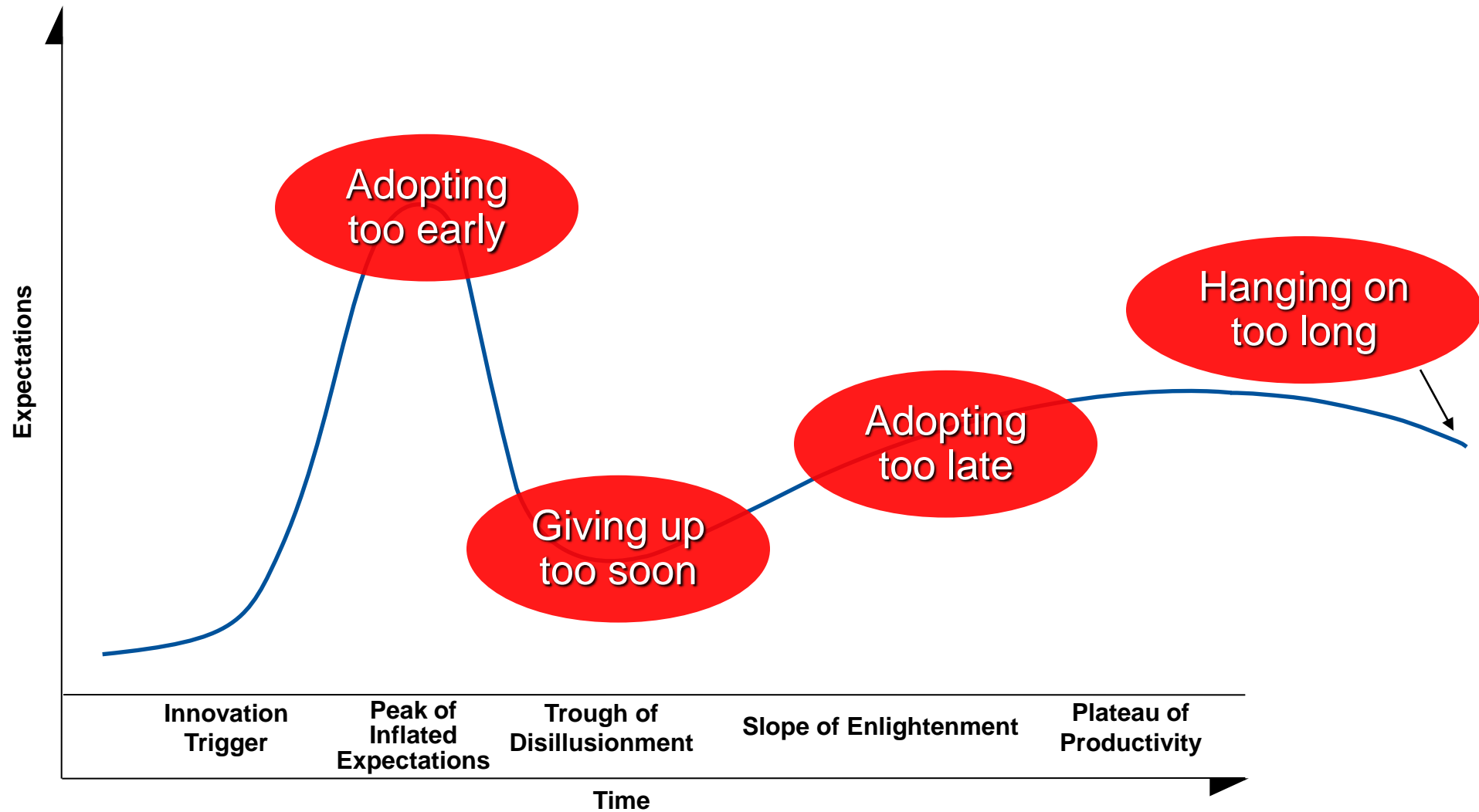Internet of Things — Gesture Recognition
Natural Language Question Answering — Machine-to-Machine Communication Services
Mobile Robots
"Big Data" and Extreme Information Processing and Management — Mesh Networks: Sensor

Location-Aware Applications

Social TV — Speech Recognition
Predictive Analytics

Cloud/Web Platforms
Video Analytics for Customer Service — Mobile Application Stores
Computer-Brain Interface — Biometric Authentication Methods
Hosted Virtual Desktops
Quantum Computing — Idea Management
Human Augmentation — QR/Color Code
3D Bioprinting — Consumerization
Virtual Worlds — E-Book Readers

As of July 2011

| Technology Trigger | Peak of Inflated Expectations | Trough of Disillusionment | Slope of Enlightenment | Plateau of Productivity |

time

Years to mainstream adoption:

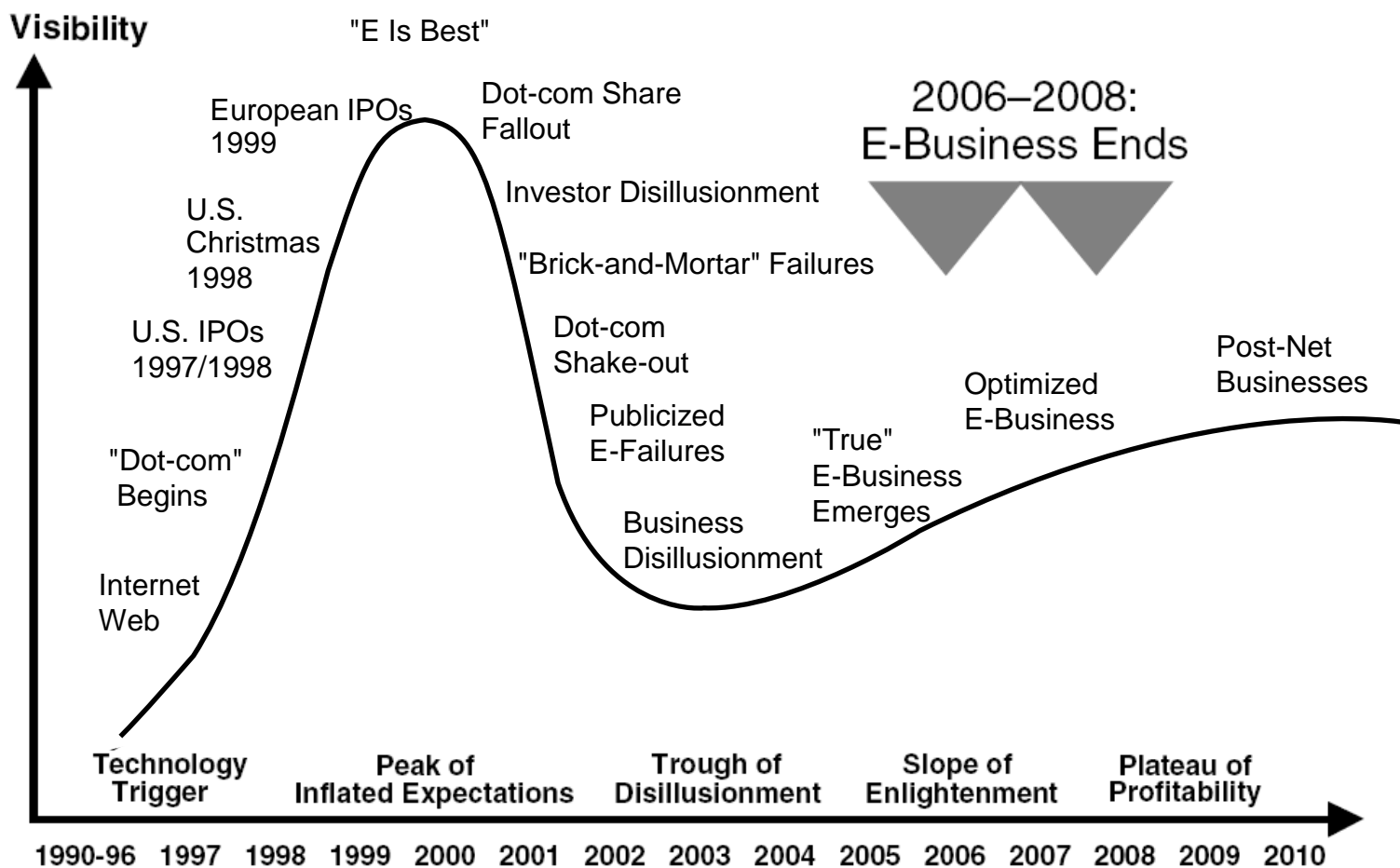○ less than 2 years   ◔ 2 to 5 years   ● 5 to 10 years   ▲ more than 10 years   obsolete ⊗ before plateau

Components of the Hype Cycle
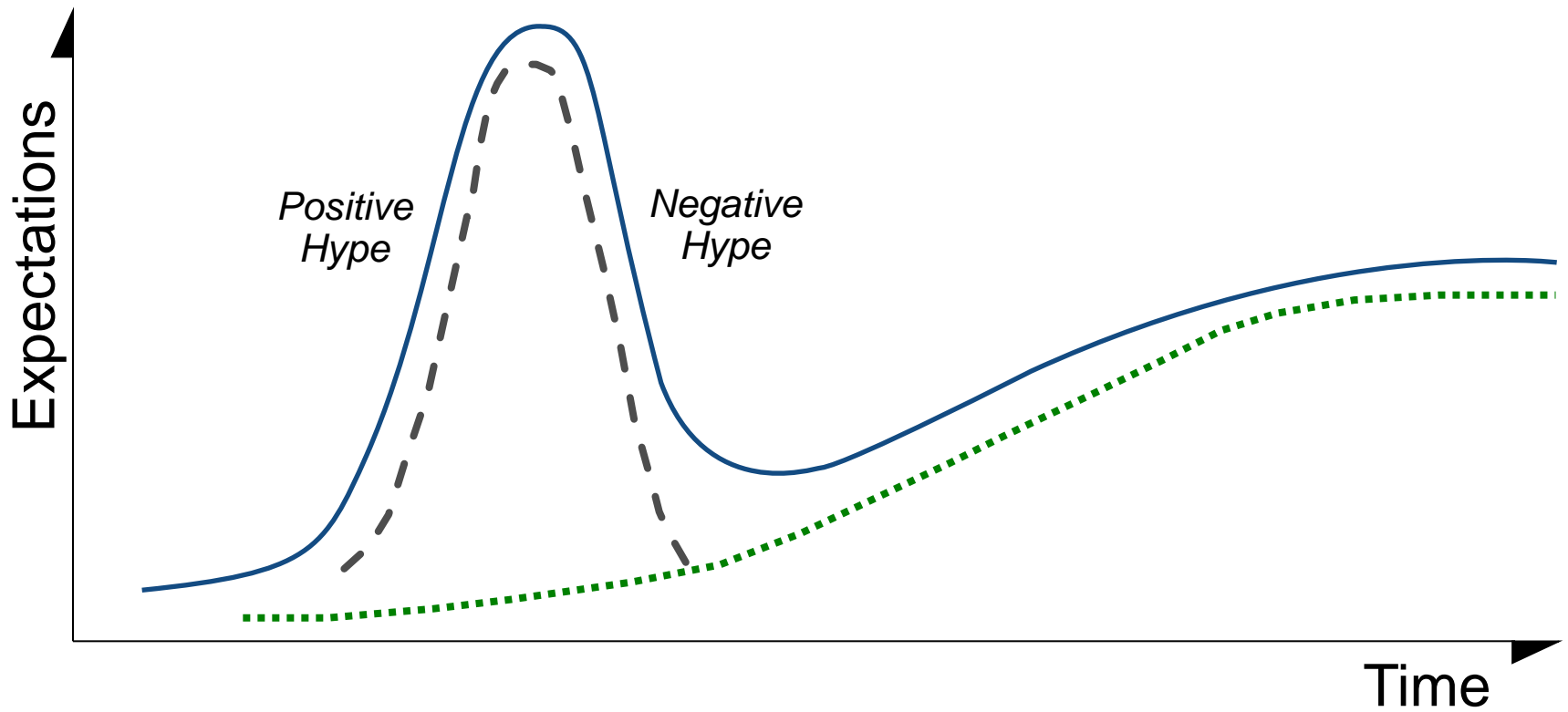
Hype Cycle Traps

Predictive Value of the Hype Cycle: E-Business Hype Cycle Published in 1999

Visibility

"E Is Best"

European IPOs 1999

Dot-com Share Fallout

2006–2008: E-Business Ends

Investor Disillusionment

U.S. Christmas 1998

"Brick-and-Mortar" Failures

U.S. IPOs 1997/1998

Dot-com Shake-out

Post-Net Businesses

Optimized E-Business

Publicized E-Failures

"True" E-Business Emerges

"Dot-com" Begins

Business Disillusionment

Internet Web

Technology Trigger | Peak of Inflated Expectations | Trough of Disillusionment | Slope of Enlightenment | Plateau of Profitability

1990-96 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

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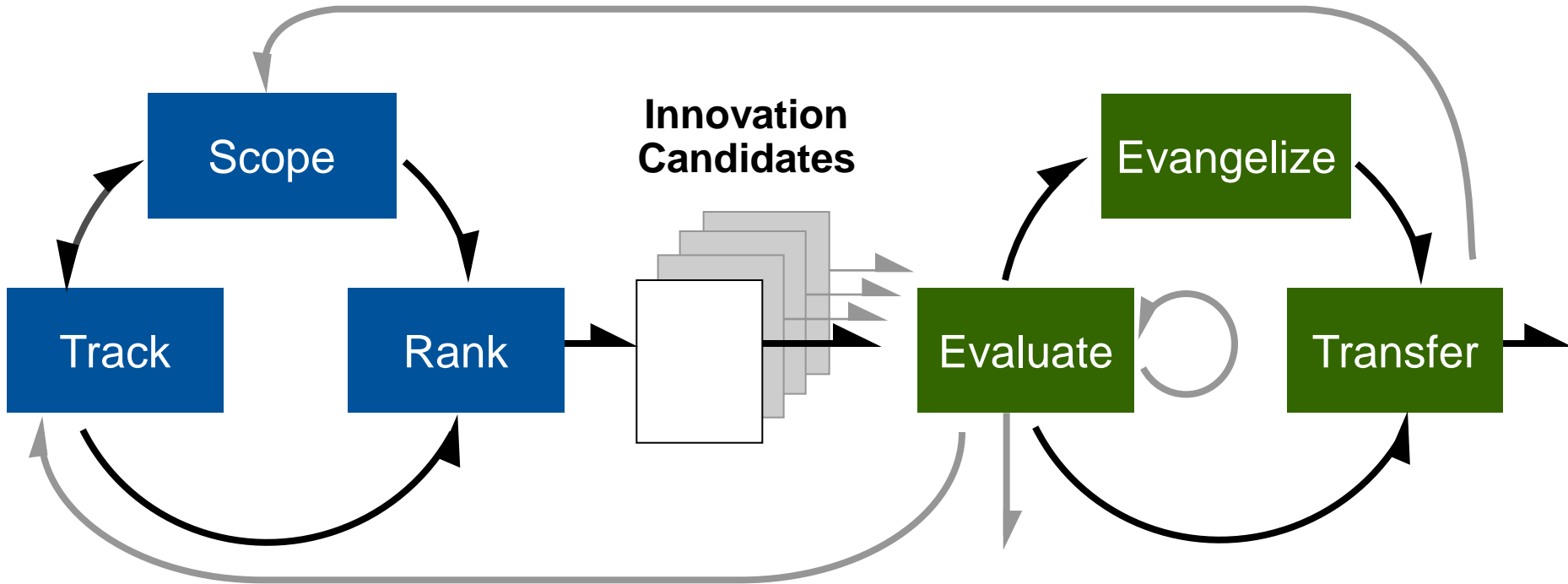# Maturity Model for Innovation Management

Innovation is sustainable when it has an owner

Level 1: Reactive	Level 2: Active	Level 3: Defined	Level 4: Performing	Level 5: Pervasive	
Decisions driven by personality.

Ad hoc innovation. | Teams share best practices.

Locally funded innovation initiatives. | Teams funded & sustainable.

Employees contribute ideas.

Processes, are formalized and shared.

Active executive support. | Strategic partnerships.

Expert innovation and catalyst teams.

Best-in-class processes.

Championed at enterprise level. | World-class leader in new practices.

Open innovation and codevelopment.

Pervasive culture of innovation.

Multiple high-functioning teams.

Integral core competency. | **Innovating How We Innovate**

Partnerships and Open Innovation

Organization and Infrastructure

Culture and People

Processes and Practices

Strategy and Intent |

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STREET Process for Innovation Adoption

Scope → **Rank** → Innovation Candidates → **Evaluate** → **Evangelize** → **Transfer**
Track → **Scope**

See "Mastering the Hype Cycle: How to Choose the Right Innovation at the Right Time," by Jackie Fenn and Mark Raskino

Harvard Business Press

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# Leverage Grass Roots Creativity

Of employees:

- 10%, 15%, 20% time
  - mostly adjacent projects
  - actually nights and weekends time
  - most efficient and focused use of time
  - tapping intrinsic motivation
  - ideas routed through centralized prioritization
- Ideation challenges
- App/Hack/FedEx days
- Incubation programs

Of customers and partners:

- Ideation challenges
  - Lead customers
- Innovation networks
- Pre-competitive commons
  - IP marketplaces
  - Crowdsourcing

"The task is not so much to see what no one yet has seen, but to think what nobody yet has thought about that which everybody sees."
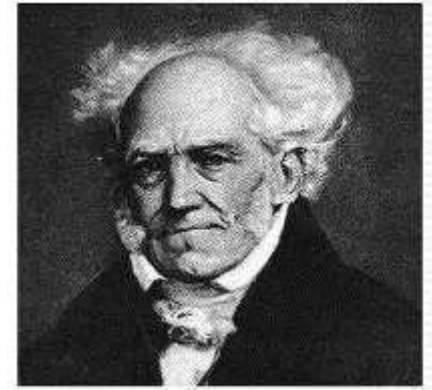
Arthur Schopenhauer, 1788-1860

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