

Emerging Technologies Hype Cycle for 2013: Redefining the Relationship

Hung Le Hong, Research VP

Jackie Fenn, VP & Gartner Fellow

Executive Leadership and Innovation

August 21, 2013

@GARTNER_INC

This presentation, including any supporting materials, is owned by Gartner, Inc. and/or its affiliates and is for the sole use of the intended Gartner audience or other authorized recipients. This presentation may contain information that is confidential, proprietary or otherwise legally protected, and it may not be further copied, distributed or publicly displayed without the express written permission of Gartner, Inc. or its affiliates.

© 2011 Gartner, Inc. and/or its affiliates. All rights reserved.

Gartner

Gartner at a Glance



Emerging Technologies Hype Cycle for 2013: Redefining the Relationship

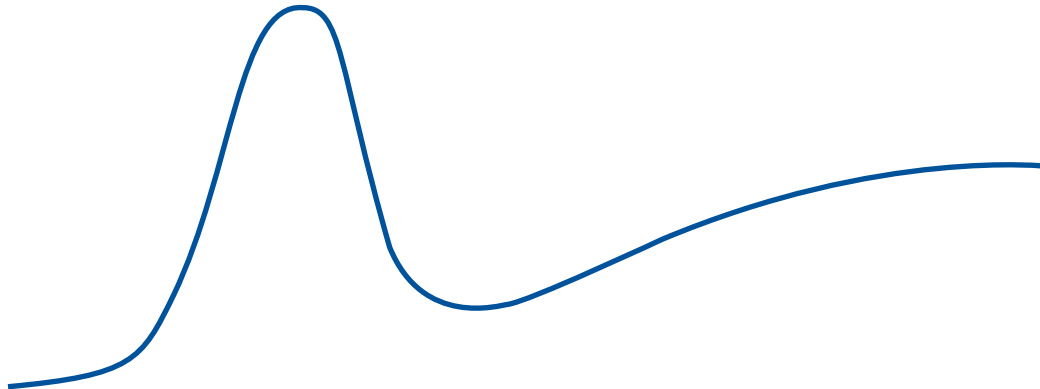
Hung Le Hong, Research VP
Jackie Fenn, VP & Gartner Fellow
Executive Leadership and Innovation
August 21, 2013

© 2013 Gartner, Inc. and/or its affiliates. All rights reserved. Gartner is a registered trademark of Gartner, Inc. or its affiliates. This publication may not be reproduced or distributed in any form without Gartner's prior written permission. If you are authorized to access this publication, your use of it is subject to the [Usage Guidelines for Gartner Services](#) posted on gartner.com. The information contained in this publication has been obtained from sources believed to be reliable. Gartner disclaims all warranties as to the accuracy, completeness or adequacy of such information and shall have no liability for errors, omissions or inadequacies in such information. This publication consists of the opinions of Gartner's research organization and should not be construed as statements of fact. The opinions expressed herein are subject to change without notice. Although Gartner research may include a discussion of related legal issues, Gartner does not provide legal advice or services and its research should not be construed or used as such. Gartner is a public company, and its shareholders may include firms and funds that have financial interests in entities covered in Gartner research. Gartner's Board of Directors may include senior managers of these firms or funds. Gartner research is produced independently by its research organization without input or influence from these firms, funds or their managers. For further information on the independence and integrity of Gartner research, see "[Guiding Principles on Independence and Objectivity](#)."

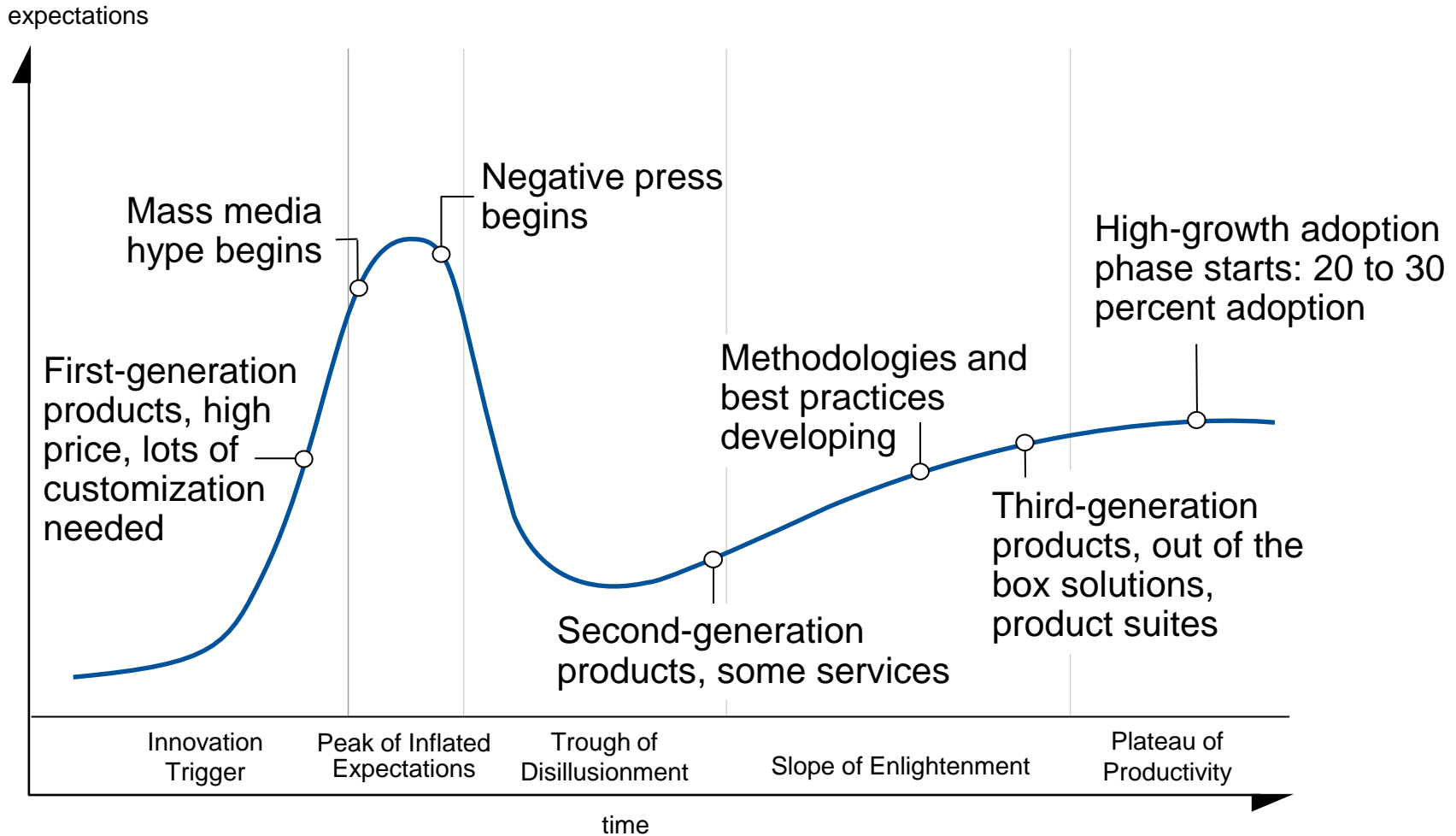
Gartner[®]

Agenda

- Introduction to Hype Cycles
- Hype Cycle for Emerging Technologies, 2013
- Priority Matrix and Toolkit
- Using Navigating Gartner's Planning Tools



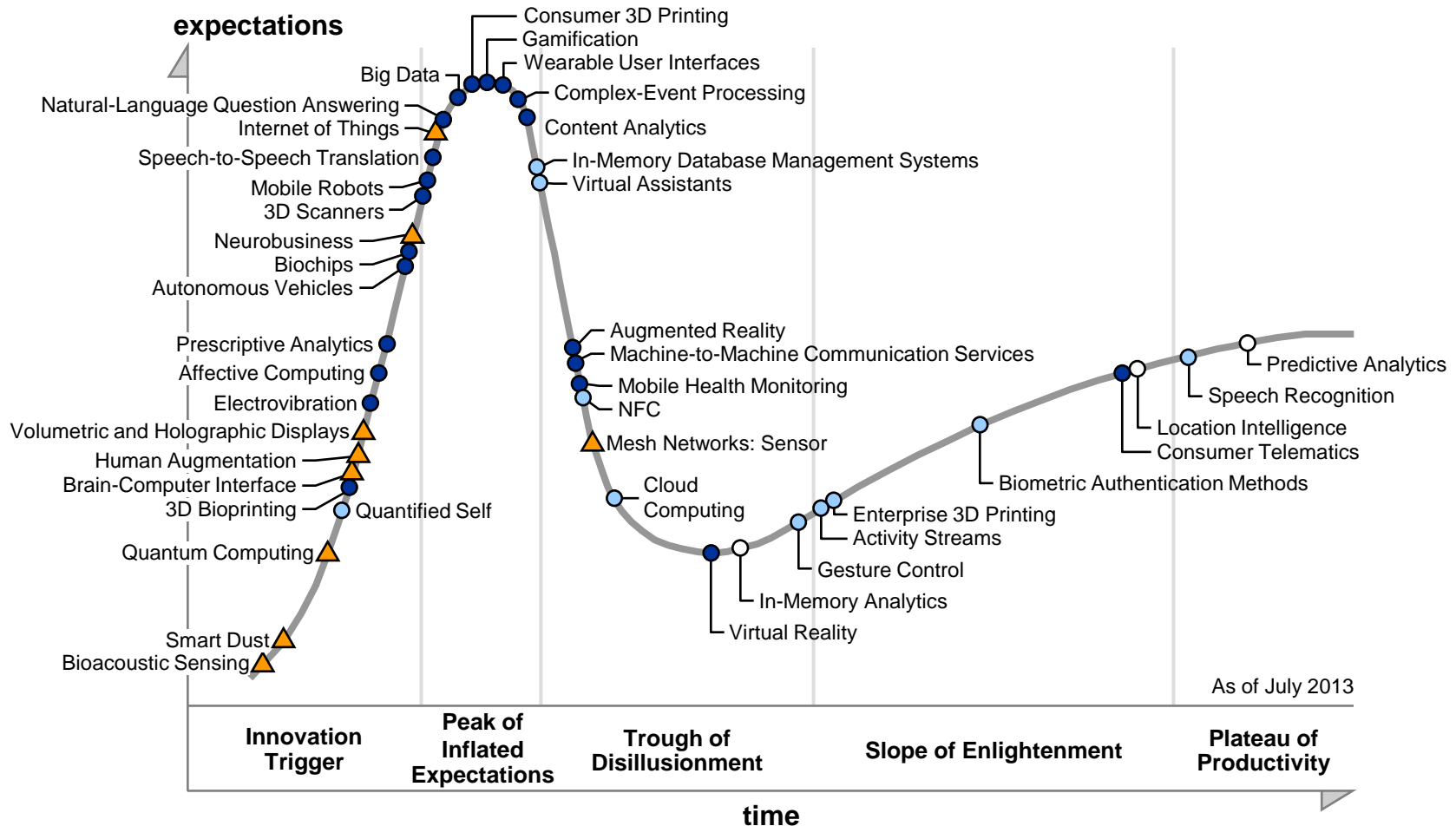
The Hype Cycle of Innovation



Gartner's Hype Cycle Special Report for 2013

- 98 Hype Cycles (technologies, applications, management, industries, regional)
- Over 2000 individual technology profiles (including definition, business impact, maturity and example vendors for each)
- New Hype Cycles this year:
 - Hype Cycle for Embedded Software and Systems, 2013
 - Hype Cycle for Consumer Market Research, 2013
 - Hype Cycle for Content and Social Analytics, 2013
 - Hype Cycle for Open Banking, 2013
 - Hype Cycle for Bank Operations Innovation, 2013
 - Hype Cycle for ICT in Africa, 2013

Emerging Technologies Hype Cycle, 2013



Machines and Humans Work Together

~~Humans versus Machines~~



Machines
replacing
humans



Augmenting
humans with
technology



Machines
working
alongside
humans



Augmenting Humans With Technology

1



Source: Jawbone Up

Key Technology Areas:

- Quantified Self
- Human Augmentation
- Wearable User Interfaces



Source: Google Project Glass



Source: adidas miCoach

Machines Replacing Humans

2



Source:
Audi

Key Technology Areas:

- Autonomous Vehicles
- Mobile Robots
- Virtual Assistants



Source: IBM Watson
Engagement Advisor



Source: U.S. Army

Humans and Machines Working Together

3



Source: Rethink Robotics



Source: Kiva Systems

Key Technology Areas (again):

- Autonomous Vehicles
- Mobile Robots
- Virtual Assistants

Enabling Technologies: 3 Classes

1

Machines Understanding
Humans and the Environment

2

Humans Understanding
Machines

3

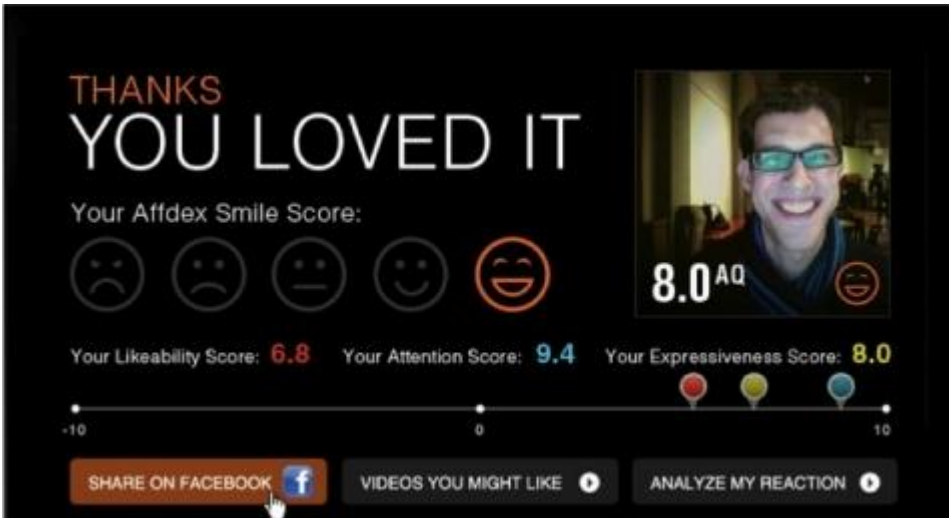
Machines and Humans
Becoming Smarter

Machines Understanding Humans and the Environment

1

Key Technology Areas:

- Smart Dust
- Brain Computer Interface
- Affective Computing
- 3D Scanners
- Natural-Language Question Answering
- Mobile Health Monitoring
- Gesture Control
- Speech Recognition



Source: Affdex



Source: <http://www.sixdindia.com>

Humans Understanding Machines

2

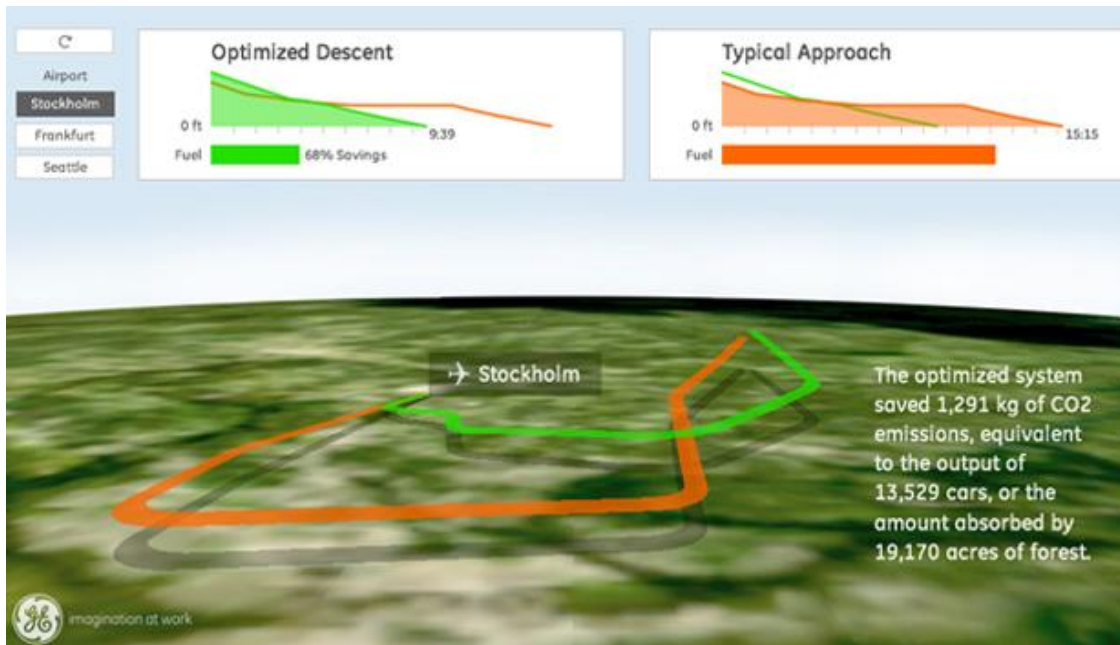


Source: Tesla

“Tesla Model S Software Update Boosts Range by 8 Miles”

Key Technology Areas:

- Internet of Things
- Machine-to-Machine Communication Services
- Mesh Networks: Sensor
- Activity Streams



Source: GE

Machines and Humans Becoming Smarter (and faster)

3



Source: IBM Watson

Key Technology Areas:

- Quantum Computing
- Prescriptive Analytics
- Neurobusiness
- Big Data
- Complex Event Processing
- In-Memory DBMS
- Cloud Computing
- In-Memory Analytics
- Predictive Analytics



Source: Panopticon

Emerging Technologies Priority Matrix 2013

benefit	years to mainstream adoption			
	less than 2 years	2 to 5 years	5 to 10 years	more than 10 years
transformational		Cloud Computing Enterprise 3D Printing In-Memory Database Management Systems	x3D Bioprinting Autonomous Vehicles Big Data Complex-Event Processing Consumer 3D Printing Content Analytics Machine-to-Machine Communication Services Mobile Robots Natural-Language Question Answering	Human Augmentation Internet of Things Quantum Computing Smart Dust
high	In-Memory Analytics Location Intelligence Predictive Analytics	Gesture Control NFC Quantified Self Virtual Assistants	3D Scanners Augmented Reality Biochips Consumer Telematics Prescriptive Analytics Speech-to-Speech Translation Wearable User Interfaces	Bioacoustic Sensing Mesh Networks: Sensor Neurobusiness
moderate		Activity Streams Biometric Authentication Methods Speech Recognition	Affective Computing Electro vibration Gamification Mobile Health Monitoring Virtual Reality	Brain-Computer Interface
low				Volumetric and Holographic Displays

As of July 2013

My Hype Cycle Toolkit

- Database of all the technologies from over 90 hype cycles
- Search, sort and filter
- Create custom hype cycle

Generate Hype Cycle

Technology Name	Author(s) / Analysis By	Definition	Position	Time to Plateau	Position and Adoption Speed Justification	Business Impact	User Advice	Benefits Rating	Market Penetration	Maturity	Sample Vendors	Appears on These Hype Cycles
100 Gbps Transport	Juan Fernandez; Peter Kjeldsen	Updates to optical transport systems enabling the	1e.post-trigger 25%	3.Five to 10 years	No commercial deployments are available as of mid-2009. CSP trials are advanced and	This technology offers cost-effective addressing	Evaluate the cost-effectiveness and maturity of the technology	3. High	1. Less than 1% of target audience	2. Emerging	Alcatel-Lucent; Ciena; Huawei; Nokia	Communications Service Provider Infrastructure
10G PON	Peter Kjeldsen	10 Gbps passive optical network (10G PON) will be a	2f.pre-peak 20%	2.Two to five years	The fixed-access market is a high-volume market, and the challenge facing current-generation	10G PON could become the mainstream PON	Expect the price premium for 10G PON relative to current-	2. Moderate	1. Less than 1% of target audience	2. Emerging	Alcatel-Lucent; Huawei; Motorola	Communications Service Provider Infrastructure
3-D Flat-Panel Displays	Paul O'Donovan	Four technologies are currently used to display 3-D	1b.post-trigger 10%	3.Five to 10 years	The revival of 3-D movies has stimulated the cinema-going public, so display	The development of 3-D displays for the	3-D displays are likely to be developed for the video game market	2. Moderate	1. Less than 1% of target audience	2. Emerging	Hyundai; JVC; Panasonic; Philips Electronics;	Consumer Technologies; Human-Computer Interaction; Emerging
3-D LCDs	Mikako Kitagawa	The 3-D LCD technology enables users to view 3-D images	2h.pre-peak 10%	2.Two to five years	The 3-D LCD technology has been in the market for some time; however, it is still a niche	Notebook displays, PC monitors, game consoles,	The market remains niche, although technology developments	1. Low	1. Less than 1% of target audience	2. Emerging	Eastman Kodak; Hitachi; Holografika; JVC; LG;	PC Technologies; Human-Computer Interaction
3-D Printing	Pete Basiliere	Unlike the rapid prototyping and rapid manufacturing	2e.pre-peak 25%	3.Five to 10 years	Continued quality improvements and price decreases in both 3-D printers and scanners have	The current range of 3-D printing applications focuses on	Unlike 3-D fabricating technologies, 3-D printing is advancing	4. Transformational	2. 1% to 5% of target audience	3. Adolescent	3D Systems; Desktop Factory; Objet; RenRan;	Printing Markets and Management; Emerging Technologies

Using the Hype Cycle for your Technology Portfolio

Scan relevant hype cycles as part of your regular technology tracking activities.

Educate business and IT audiences about the peaks and troughs in expectations that they can expect as the technologies mature.

Integrate the toolkit into your technology planning process. Generate a shortlist of technologies for discussion in IT portfolio and strategic planning meetings.

Use the toolkit to drive creativity at IT or management off-sites: Select early-stage technologies and ask "Could this technology bring us a competitive advantage?"

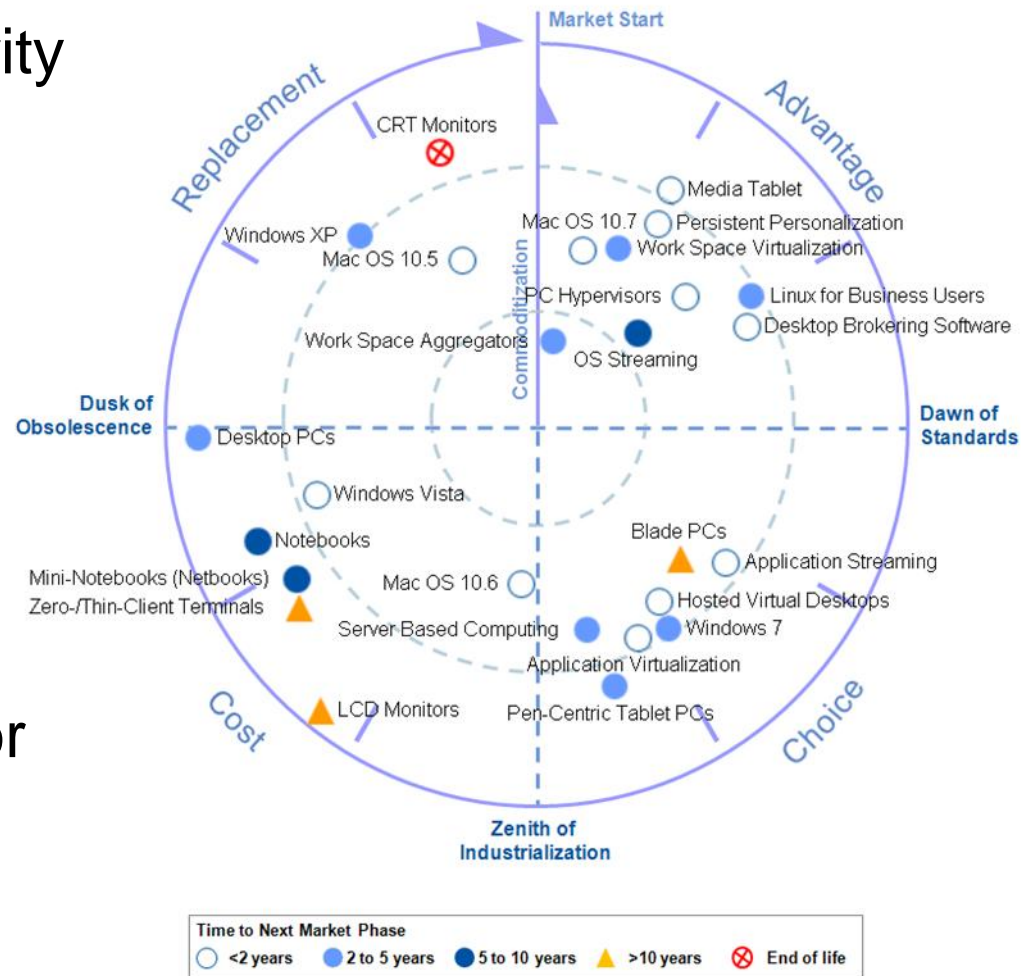
Use the toolkit as a risk reduction tool. Check through later-stage technologies to ensure that you are not missing out on key technologies entering maturity.

Keep the toolkit available as a database for technology research.

Create your own Hype Cycle of technologies that you are adopting or evaluating.

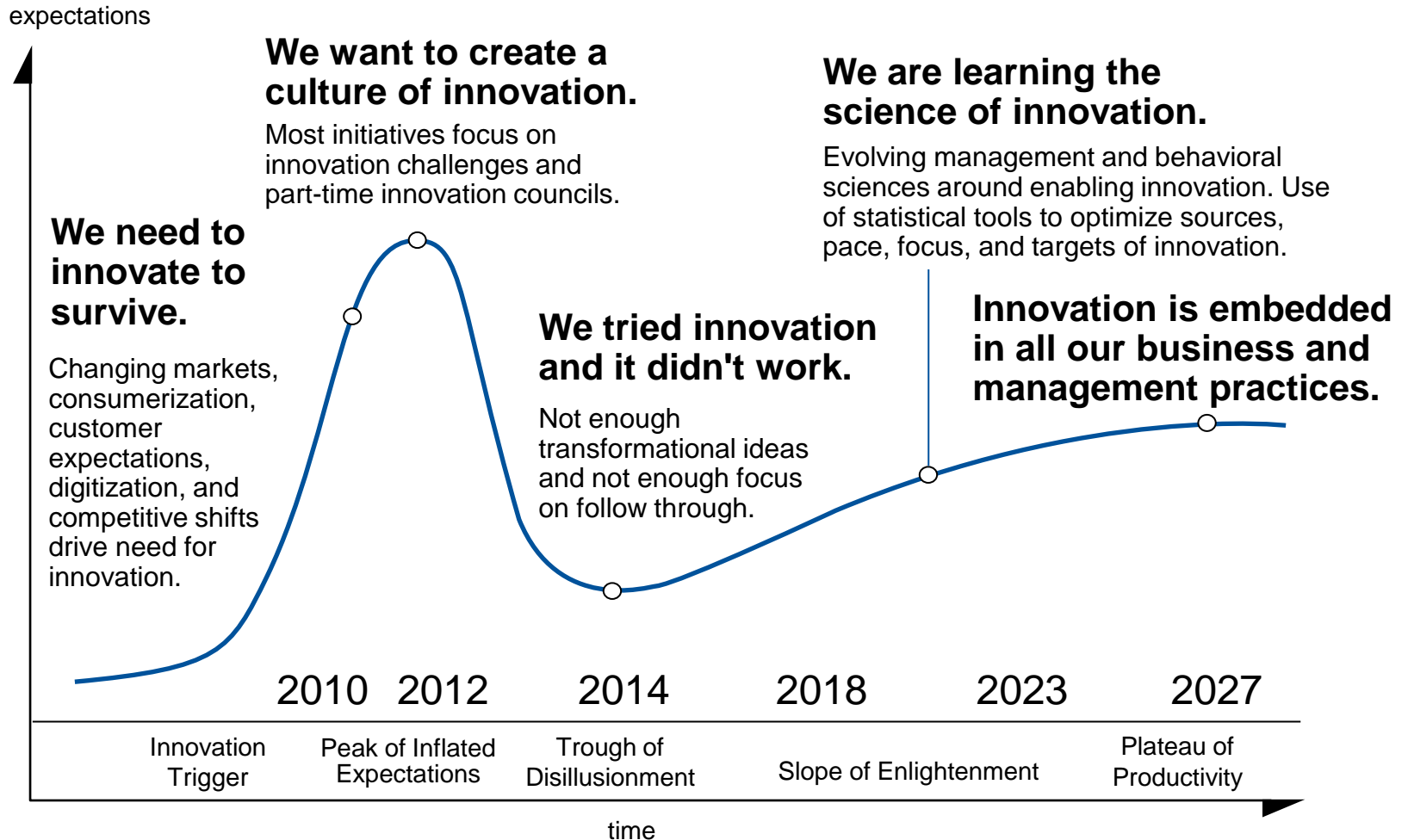
Related Gartner Models and Tools

- Use Hype Cycles and Priority Matrices for “hunting” technology opportunities.
- Use IT Market Clocks for “farming” IT resources.
- Use Innovation Insights for deep dives into emerging technologies.
- Use Cool Vendor reports for inspiration and ideas.
- Use Magic Quadrants and MarketScopes for decisions about vendor selection.



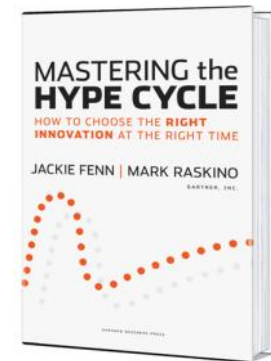
IT Market Clock for Client Computing, 2011

The Innovation Management Hype Cycle



Recommended Gartner Research Contd.

- **Gartner's Hype Cycle Special Report for 2013**
Jackie Fenn and Mark Raskino (G00255225)
- **Hype Cycle for Emerging Technologies, 2013**
Hung LeHong and Jackie Fenn (G00252762)
- **Understanding Gartner's Hype Cycles**
Jackie Fenn and Mark Raskino (G00251964)
- **Toolkit: My Hype Cycle, 2012**
Jackie Fenn (G00233937)
- **Mastering The Hype Cycle:
How To Choose The Right
Innovation At The Right Time**
Jackie Fenn and Mark Raskino,
Harvard Business Press



For full details by region, visit:
gartner.com/symposium

Gartner® SYMPOSIUM ITXPO® 2013



UNITED STATES
OCTOBER 6 – 10



SPAIN
NOVEMBER 11 – 14



**UNITED ARAB
EMIRATES**
MARCH 5 – 7, 2013



JAPAN
OCTOBER 16 – 18

BRAZIL
NOVEMBER 4 – 6



INDIA
OCTOBER 21 – 23



AUSTRALIA
OCTOBER 28 – 31



SOUTH AFRICA
SEPTEMBER 16 – 18



The World's Most Important Gathering of **CIOs** and Senior **IT Executives**

Simple steps for increasing the value of today's webinar experience

- Visit gartner.com/webinars
 - Today's presentation is available to download on the Attachment Tab of our webinar portal or will be available shortly on our webinar page
 - Check out the schedule of upcoming Gartner webinars (plus on-demand webinars) and don't forget to share these resources with your colleagues
- Contact your Gartner account executive with any additional questions, comments or for a complimentary copy of today's presentation