Innovation: Look for the Impact

Client Issues

1. Which emerging and embryonic technologies should organizations be examining for competitive advantage?
2. What are the most disruptive trends and most significant opportunities arising from emerging information technology?
3. What are the most effective strategies and tactics for managing the evaluation, transfer and deployment of emerging technologies?

Three Mega Technology Trends

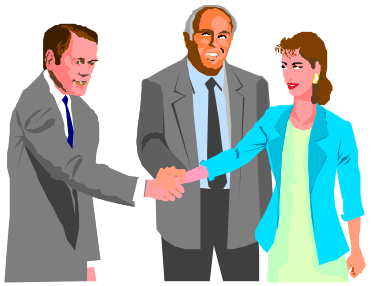
Ubiquitous Access

Wireless: Seamless Domain Roaming

Smartphones

Wearables

E-Ink, LEPs, OLEDs



Speech Recognition

Ultrawideband

Fuel Cells

Smart Objects and Ambient Intelligence

RFID

Location Sensing

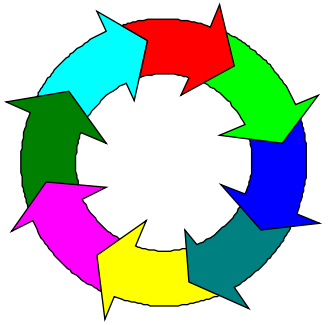
MEMS

Object Identification

Sensor Networks

Semantic Connectivity

Semantic Web



Automatic Tagging

Affinity Profiles

XBRL

Information Extraction

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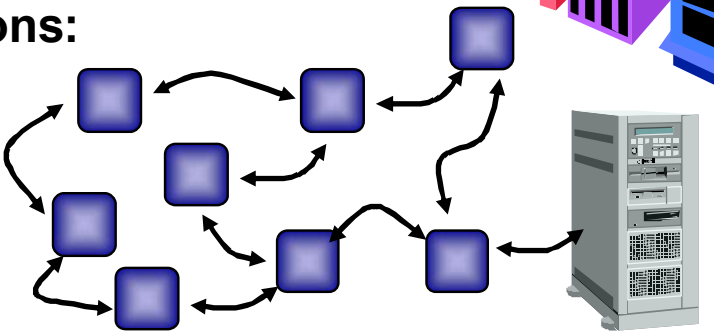
The Real World Web

What should objects know?
Identity, location, owner, history, safety, environment …

Smart objects drive smarter decisions:
Safety compliance and notification
Item tracking
Proactive healthcare



Product + connectivity = service:
Risk-based insurance
Traffic routing
People tracking

Challenges:
Security and privacy risks
Managing the data flood

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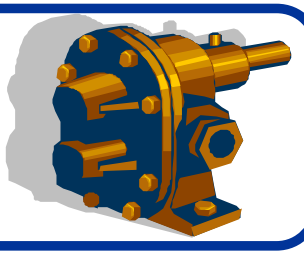
Augmented Reality

Location specific
military
factory quality
street signs

Object specific
equipment repair
healthcare
service check-in



Person specific
name reminder
hotel/airport check-in

Telepresence
healthcare
commerce
community

Power of the Web at point of decision

Merging of the physical and digital worlds

Virtual objects in the real world (games, coupons)

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Perfect Recall

Digital trails: audio, video, transactions, decision paths

Passive capture: no explicit action by users

Cheaper to keep everything: write once, read never memory

Removes subjectivity

The power of visual replay

Proof of actions shifts responsibility

Promotes honesty and politeness?

Value to Existing Industries:

Healthcare — new diagnostic models

Physical security — live video feeds

Insurance — settlement, risk assessment

Education and entertainment — "being there"

Marketing — life patterns

New Businesses:

Owning the log

Creating "clean" rooms

Creating/detecting counterfeit reality

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From Information to Insight

More
Sensors
Applications
Devices
Storage
Bandwidth
Integration

More
DATA

Describe
Data Better

Better Sense-Making

Search
& Analytics

Metadata Tagging

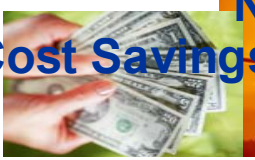
Knowledge
Presentation

Inter-
operability

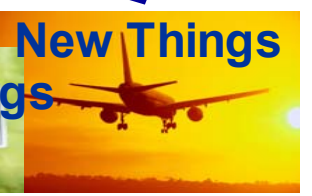
Automation

Decisions

Business Intelligence
Content Management



Cost Savings



New Things

Exploiting Technology-Enabled Communities

Global
Extending the enterprise
— Innocentive, TopCoder

Low interaction, large membership
Web sites, e-mail, blogs

Implicit
Mining the network — Google, Amazon
Social network analysis

Above the radar for enterprises
New sources of opportunity and liability – Instant Messaging, VoIP

On-demand
Expertise location

Local
Permanent
High interaction
Small membership

Collective
Wikis

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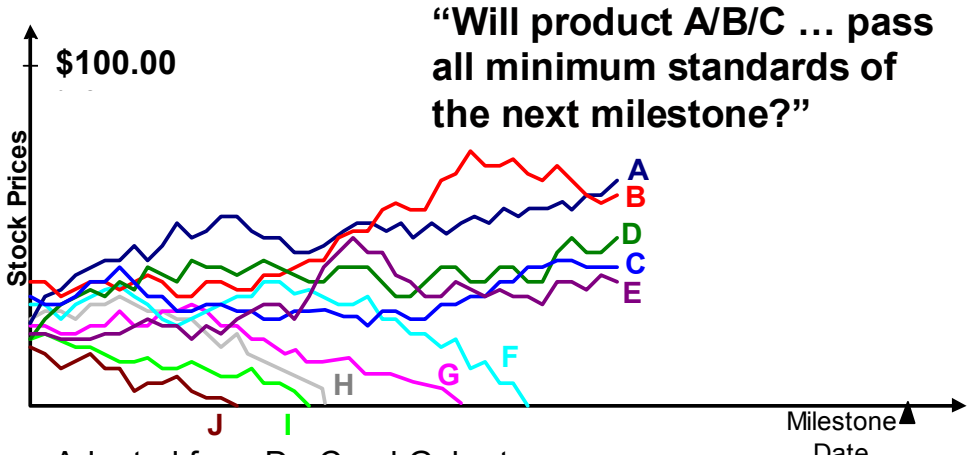
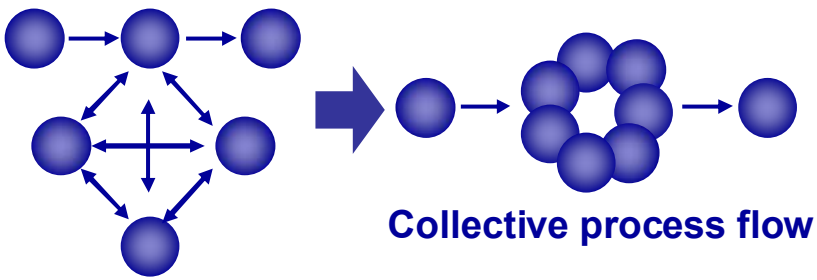
Harvesting Collective Intelligence

"None of us is as smart as all of us"

- Collaboration: wikis/wikipedia.org
- Prediction markets: product selection, employee evaluation?
- Metadata creation: trust and recommendation engines, link analysis



Adapted from Dr. Carol Gebert
Incentive Markets



Issues:

- Determining scope of applicability
- Migrating from procedural workflow
- Recognizing reward systems

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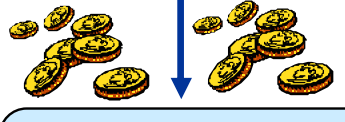
From E-commerce to Microcommerce

Mobile Payments
e.g., Vodafone, Simpay

Web E-payments
e.g., PayPal, Click&Buy

E-payment systems

Decreasing Transaction Costs



Microcontent
e.g., weather, music tracks, news, articles, ring tones

Microservices
e.g., parking reservation, routing, dispatching

Microproducts & microservices

Linking buyers & sellers: pervasive connectivity, devices, ease of use

Time/location/context-dependent commerce

- New things to buy and sell
- New ways to sell old things (but potentially more of them!)
- New business models (mobile auctions)
- Combines with e-ticketing and e-couponing
- New customer touchpoints imply new relationships and intermediaries

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Microcommerce Brings Opportunities

Definition: A product or service at a price of less than $5

Consumer characteristics

- Convenience, in purchase or as part of service
- Low trigger level and easily leads to impulse buying
- Value increases when offered at point or time of need

Opportunities for sellers and for processors

Examples

iTunes music downloads

ebay auctions of small items

Smartcards – HK Octopus

Mobile taxi reservation UK

Paypal for payments

Mobile retail purchases - NTT

Five Elements of Microcommerce

Business proposition

Transaction

Micropayment

Channels, e.g. delivery

Aggregation and payment services

Unbundling Business Processes

Service-oriented architecture

Supply chain ecosystems

Exchanges and marketplaces

Decreasing the granularity of tasks eases transfer of responsibility from one stake-holder to another

Automate – credit check, RFID tag read

Outsource to specialist: Web conferencing, calling-card risk

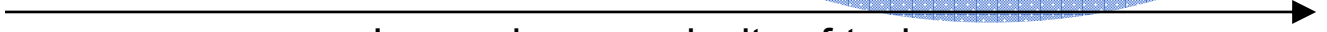
Self sufficiency: Specialist to consumer – diagnosis, health management

Emerging Opportunities

Self-service: Customer service rep to customer – kiosks, IVR, self-checkout

Outsource down the supply chain: Claim adjustment, electronic deposits

Eliminate: Re-keying data



Simple Increasing complexity of task **Complex**

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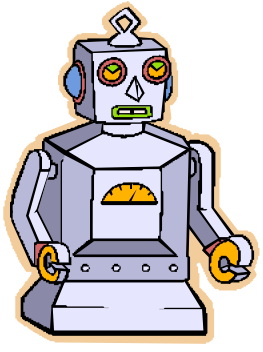
Hovering on the Edge of Impact



Robots

Driving, jogging, dancing, interacting and vacuuming their way into society

Computer Brain Interfaces

Distinguishing many signals is a challenge

Implanted electrodes still work best

Speech-to-Speech Translation

Domain-specific

From grammar-based to corpus-models

Things we still won't have by 2015

Unconstrained natural language speech recognition (Star Trek style)

Intelligent agents worth spending time with

Remote virtual meetings as effective as face-to-face meetings

Smarter humans

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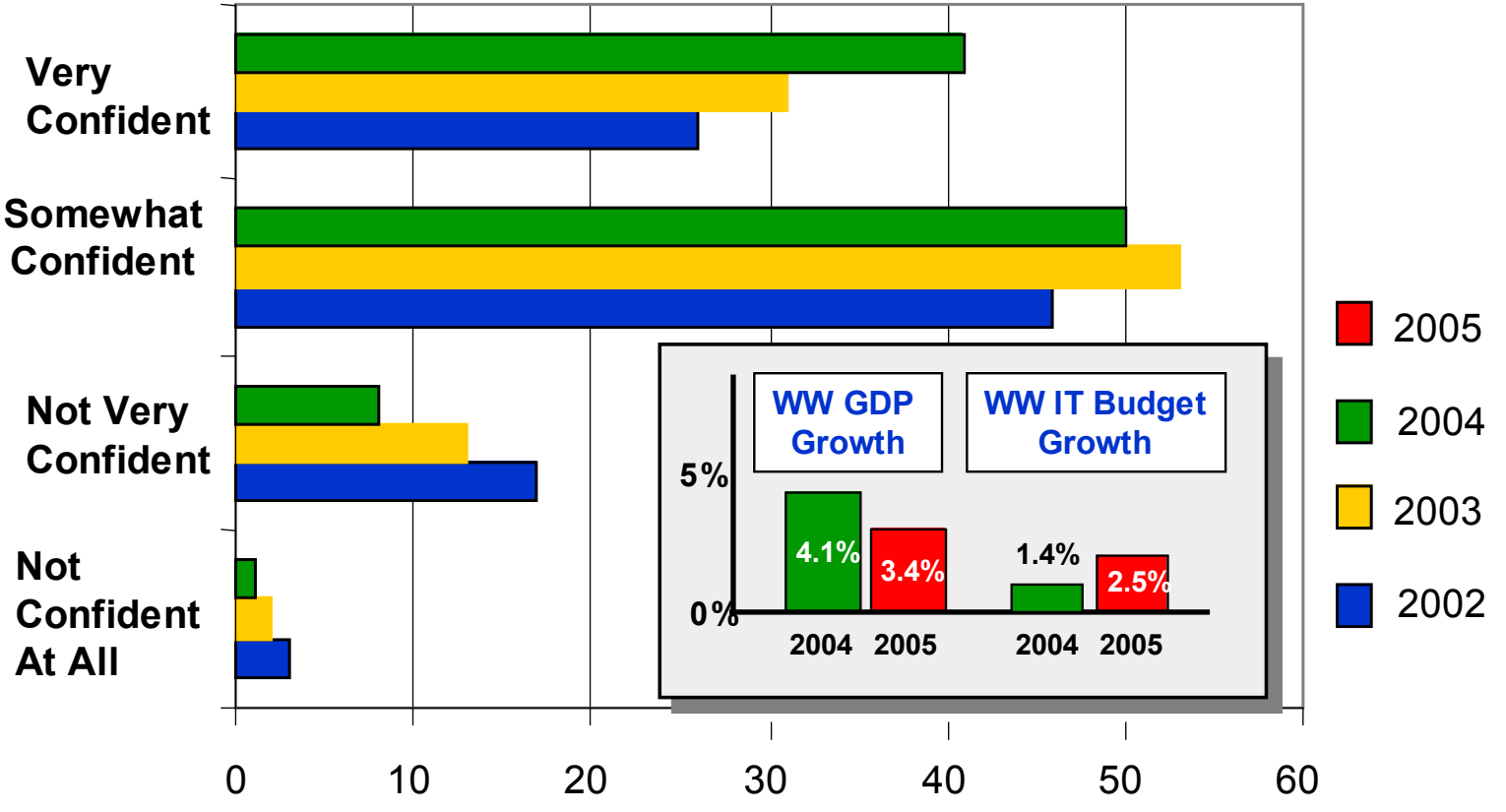
CEO Views About Revenue Growth

*How Would You Assess Your Level of Confidence for the Revenue Growth of Your Company Over the Next 12 Months?



*Source: PricewaterhouseCoopers 8th Annual CEO Survey

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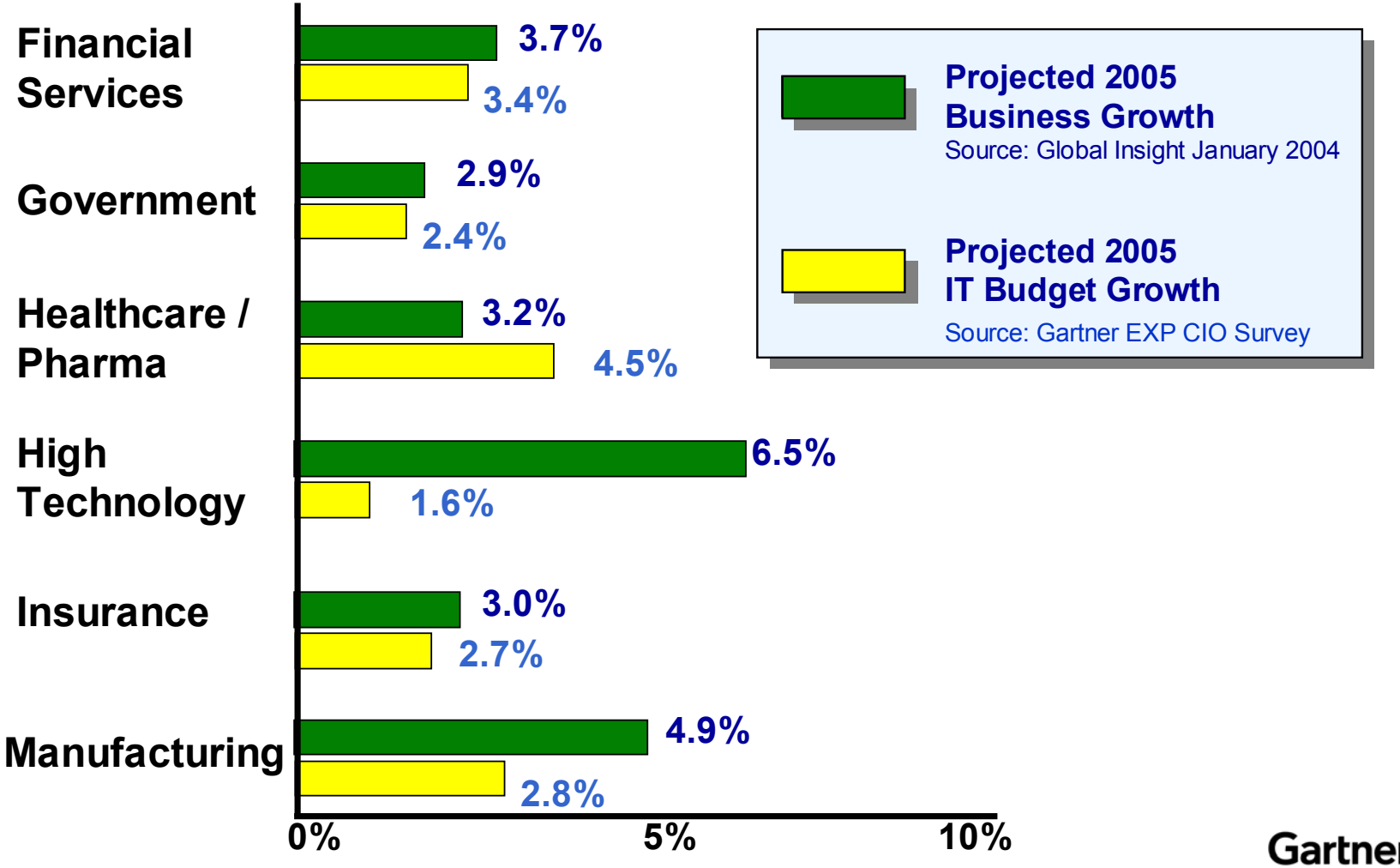
Comparison of Economic, Business and IT Growth in Selected Segments 2005 vs. 2004



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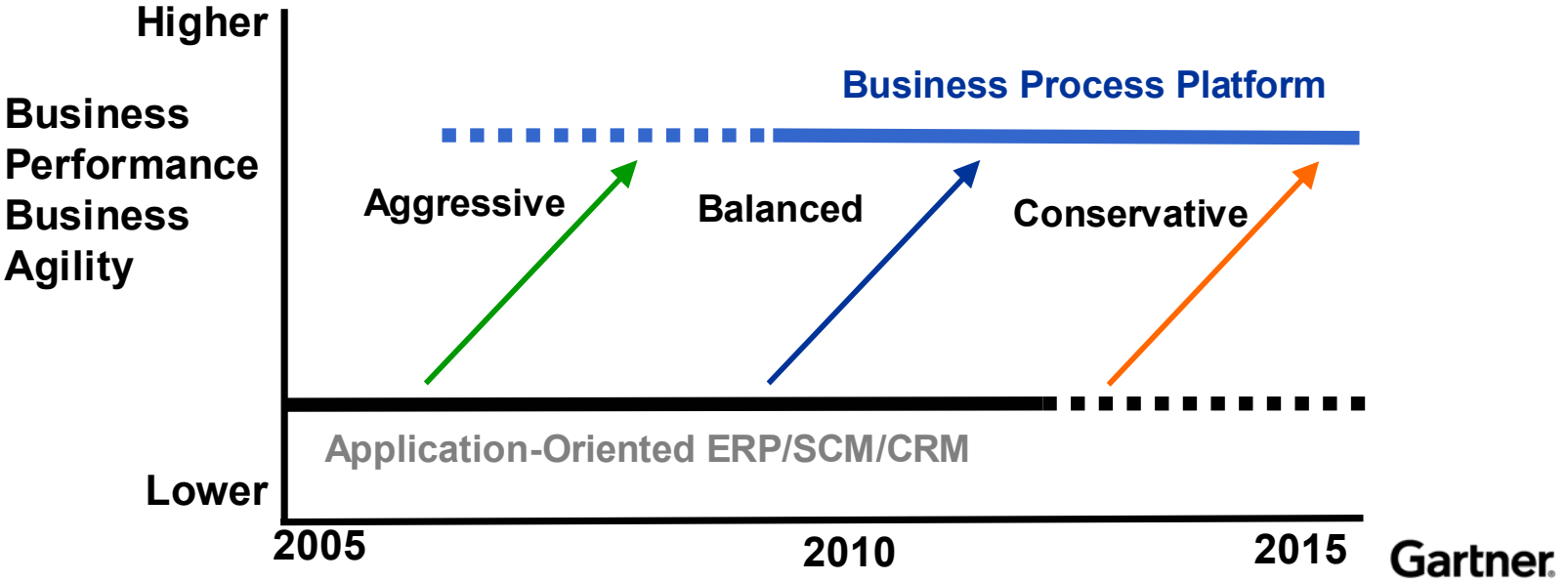
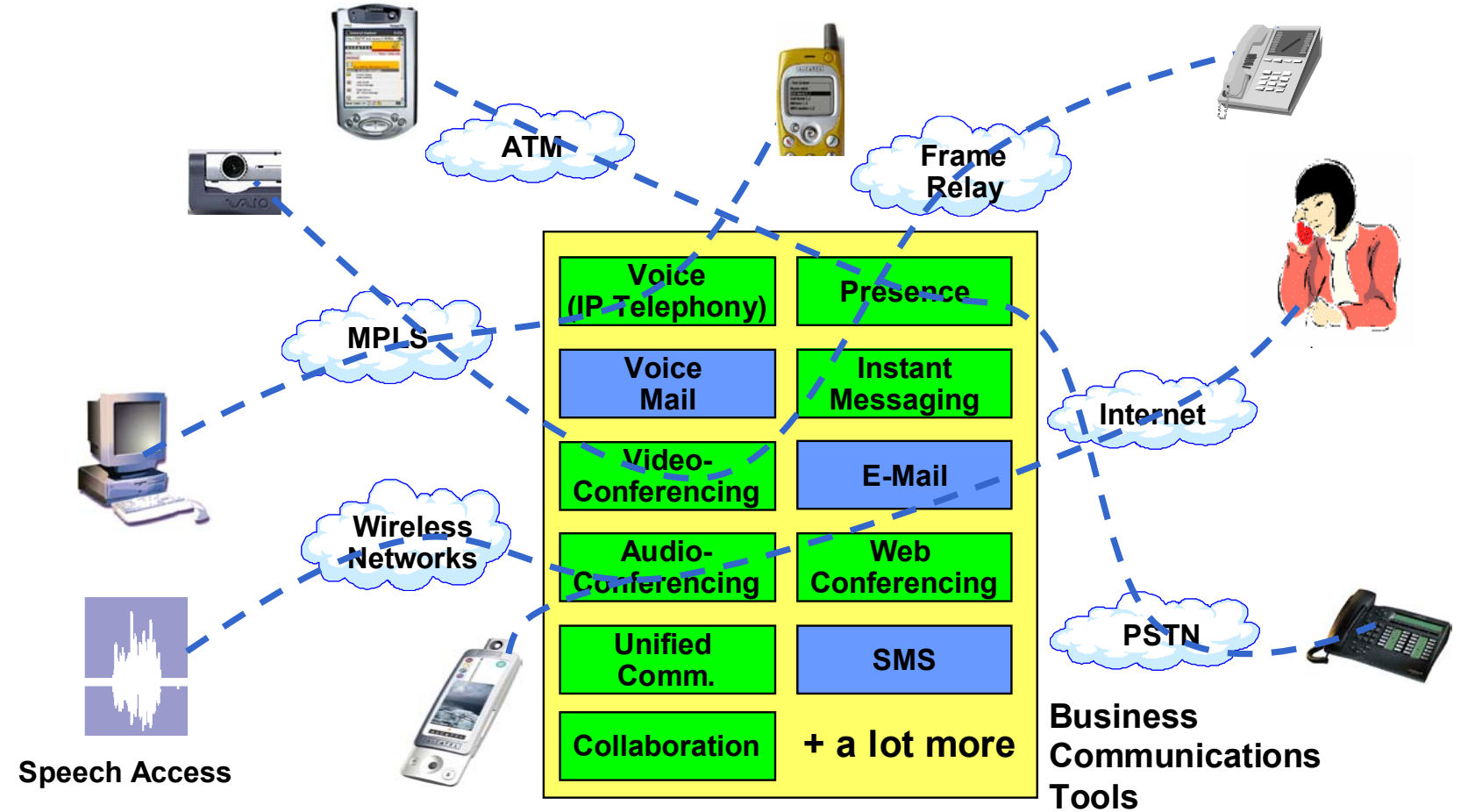
When to Stop Investing in Today's Enterprise Applications?

When to set aside continuing, incremental investment in current enterprise applications and platforms — creating a zero-base plan for the Business Process Platform.



When to Change the Way Your Business Communicates?



Start with IP Telephony and VoIP – then look to integrate communications needs with Unified Communications solutions

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Problem: Sea of Data
Solution: Tera-Architectures

Data Will Increase 10X

…every 5 years

Whatever your budget, you will always need more IT staff than you think!

Forces

- Compliance records
- Data mining and forecasts
- Voice and video
- Sensor networks and RFID
- Labor-capital imbalance
- Standardization
- Autolocation

Technologies

- Scale-out architectures
- Service-oriented architectures
- Network self-assembly
- Hardware virtualization
- Service virtualization
- Autolocation

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Top 10 Strategic Technologies 2006

Bluetooth
Linux
Portals
Instant Messaging
XBRL
Ontologies
Natural Language Search
Metadata management
OLED/LEP
Tablet PCs
4G wireless
Unified communications

MEMS
WiMax
iSCSI SANs
SCM
UWB
Real-Time Infrastructure
Micro fuel cells
Speech recognition
Wikis
IT self-service
Taxonomies
Location-aware services

Real-time DW
Smartphones
IP Telephony
Opteron
Software as Services
Mobile applications
RFID Tags
802.11g
Mesh networks
Information extraction
Semantic Web

Grid
CRM
Utility computing
Nanocomputing
Zibgee
Microcommerce
e-ink
Trusted Platforms
Camera Phones
MMS
Smart dust

Maturing within 36 months
Mission Critical Linux
Software as services
Instant messaging
Grid

Partial value next three years
RFID tags
Microcommerce
Real-time infrastructure
Mesh networks
Location-aware services
OLED/LEP displays

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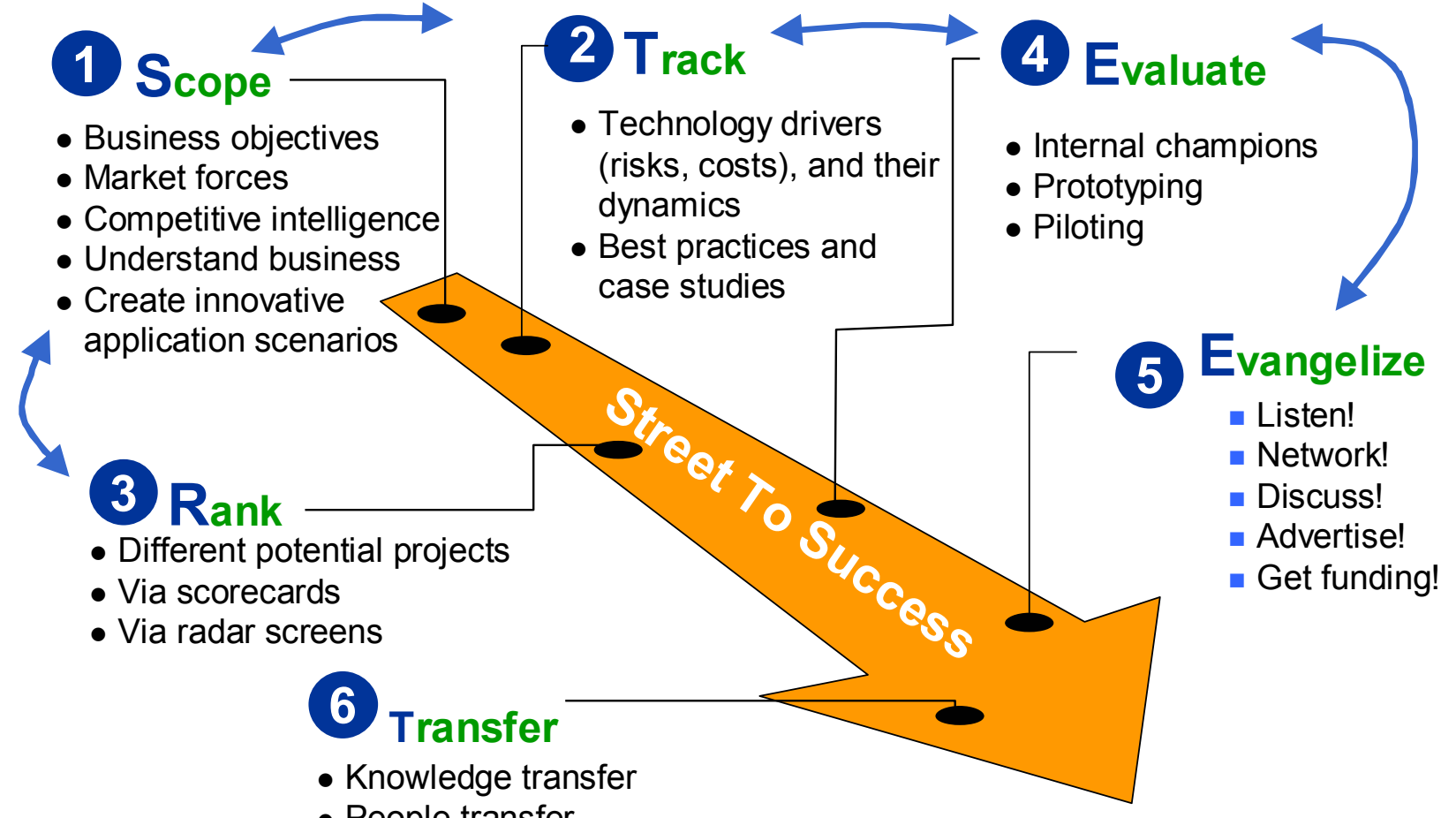
STREET Emerging Technology Planning Process



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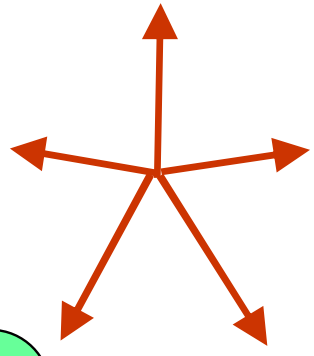
Focusing Innovation Initiatives

Persistent Business Needs
- Refine/renew business model
- Speed product development
- Increase market share

Key Business Trends
- Globalization
- Outsourcing
- Mobile workforce



Value Discipline
- Operational excellence
- Customer intimacy
- Product leadership
- Brand mastery

Immediate Business Problems
- High cost structure
- Product obsolescence
- Customer runoff

Core Competencies
- Design skill in xxx
- Knowledge of xxx

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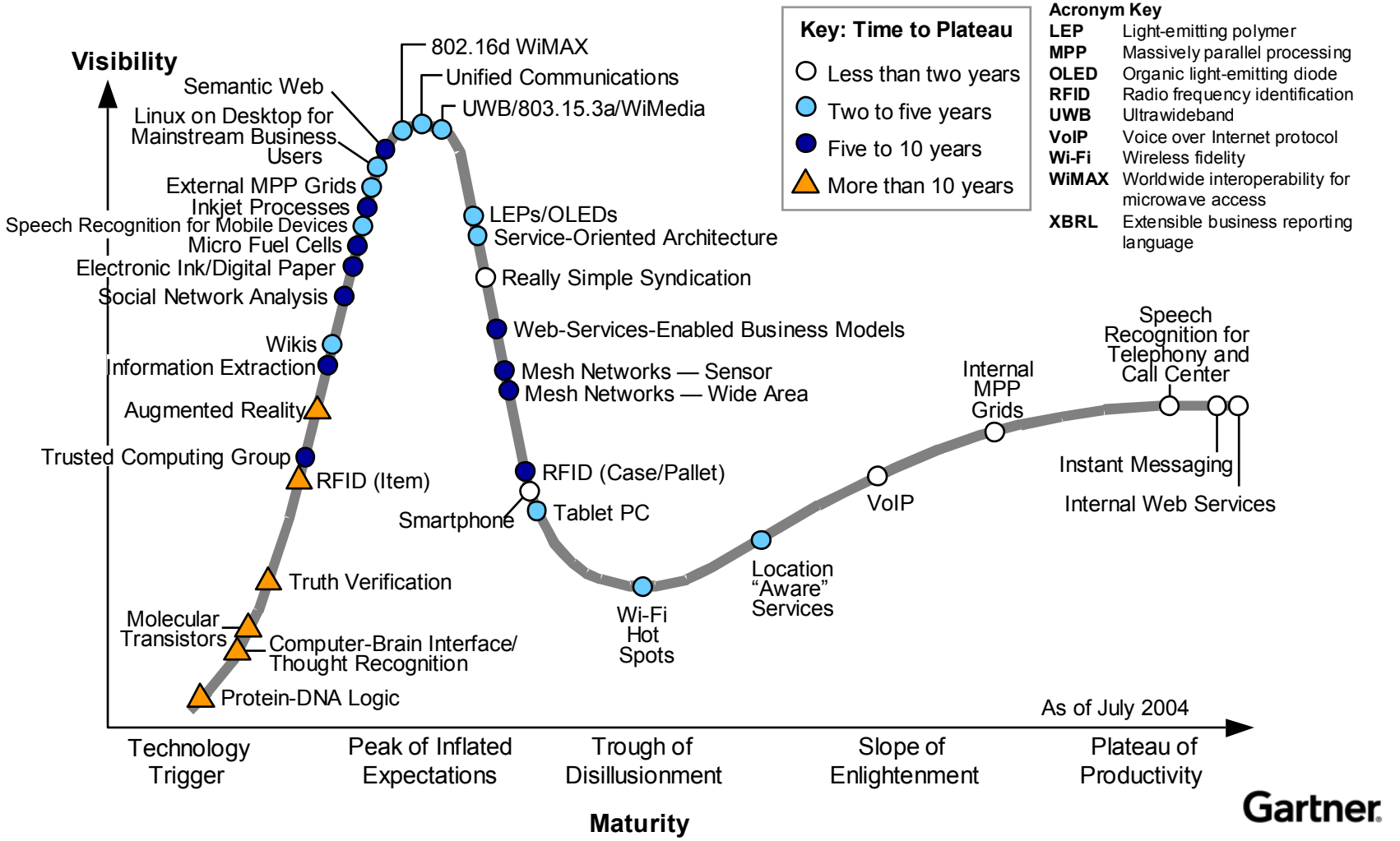
Technology Planning: Don't Just Ride the Hype Cycle



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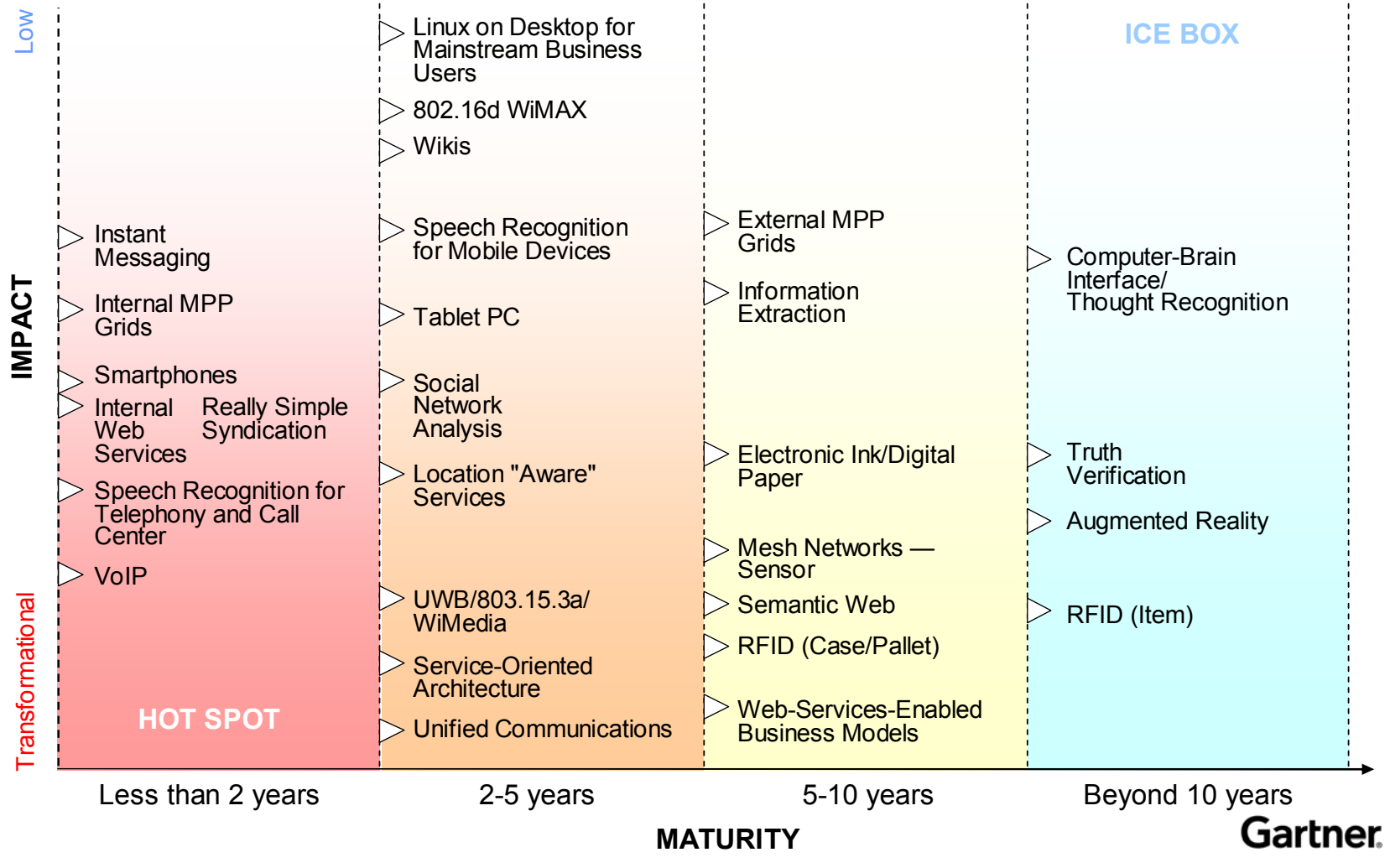
From Hype to Impact



Recommendations

- ✓ Identify the focal points for innovation in your company: where will the risk be justified?
- ✓ Examine the disruptive potential from ubiquitous access, ambient intelligence and semantic connectivity.
- ✓ Scan broadly for trends, technologies, drivers and case studies that target the focal points.
- ✓ Create a full-time emerging technology group.

"Thus, 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

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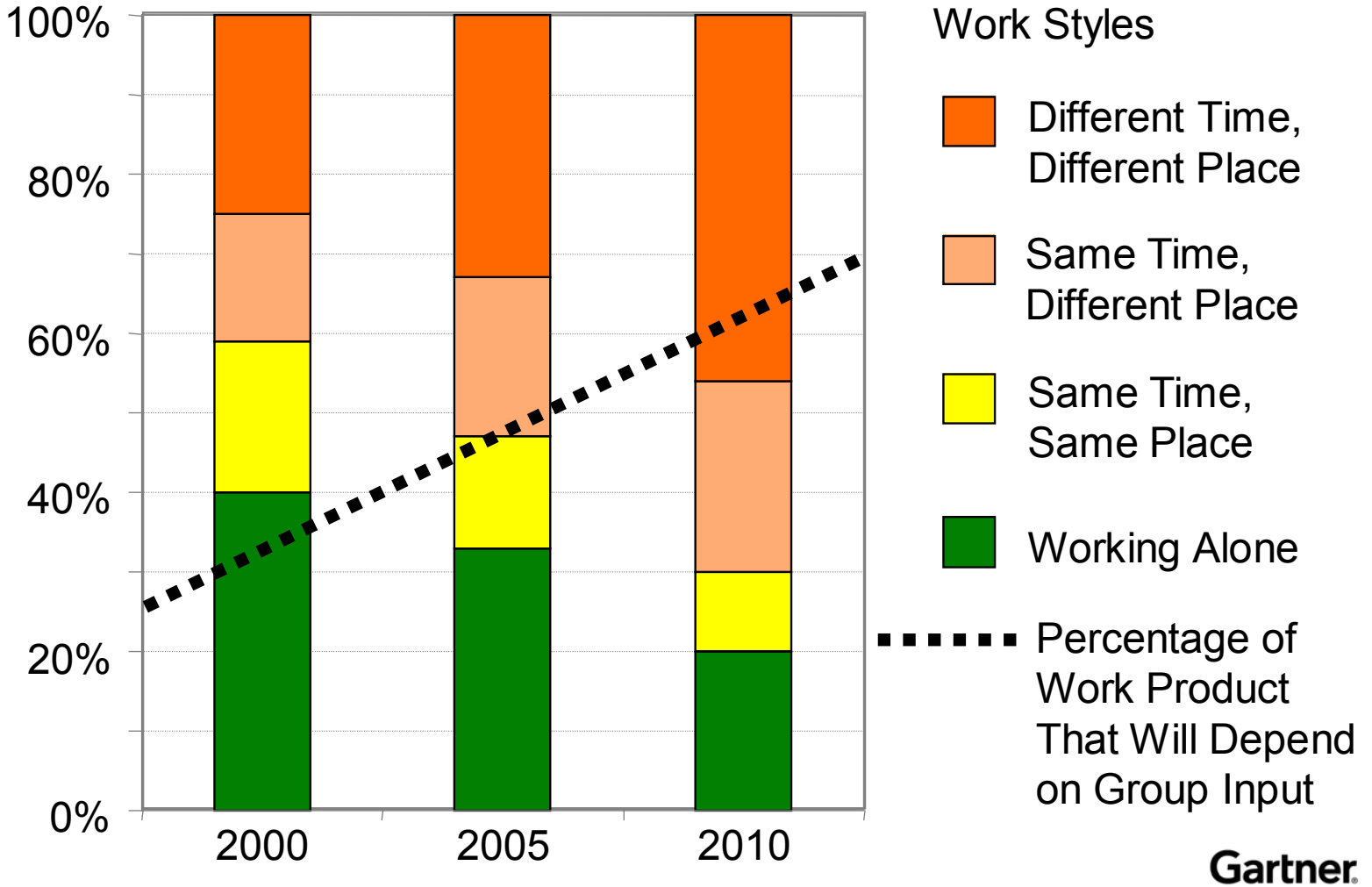
What Shapes Performance?
The Rise of Virtual Collaboration



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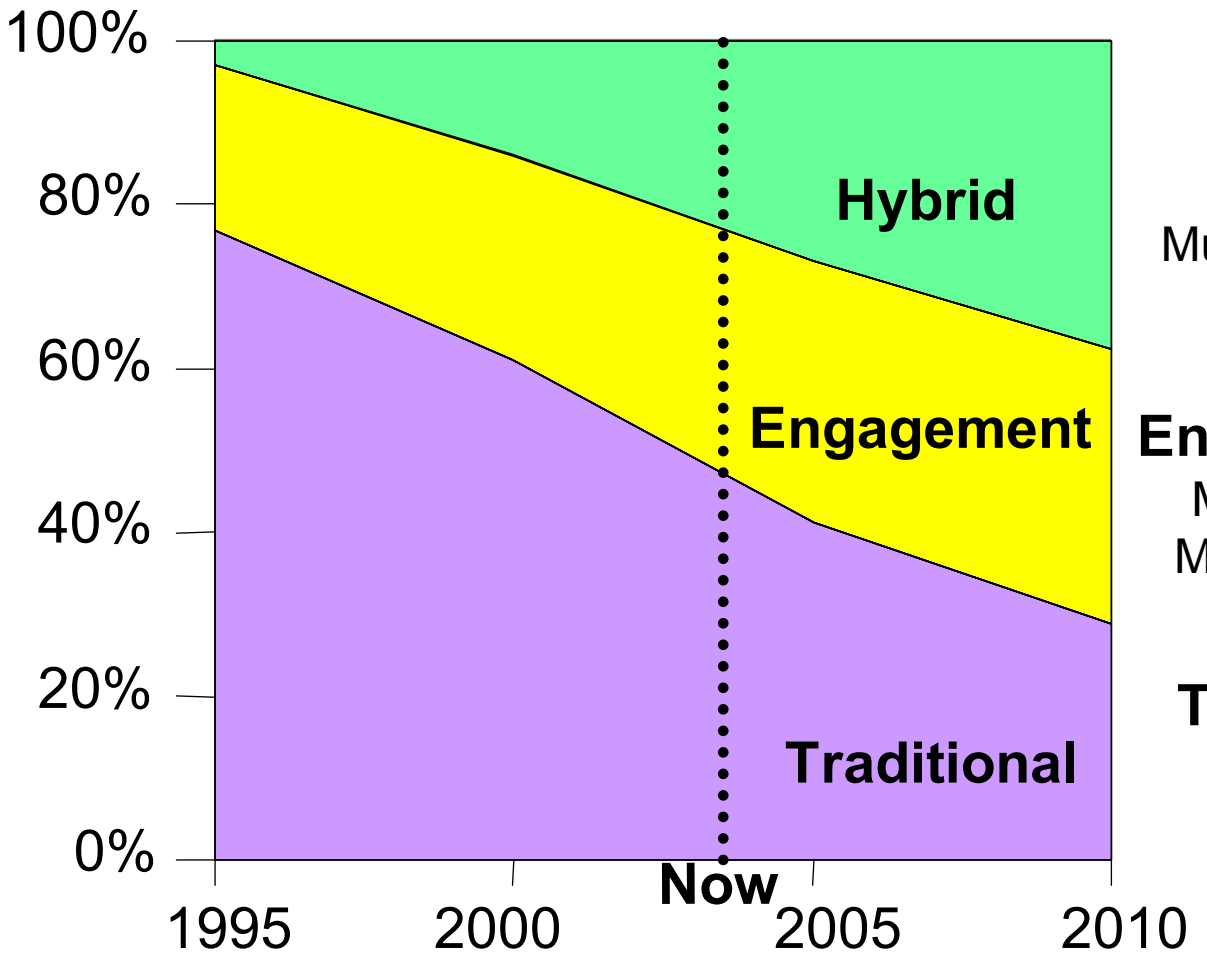
What Shapes Performance?
New Employment Models



Hybrid Model
Single Employer,
Multiple Assignments

Engagement Model
Multiple Employers,
Multiple Assignments

Traditional Model
Single Employer,
Single Assignment

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