

*Emerging Trends and Technologies*

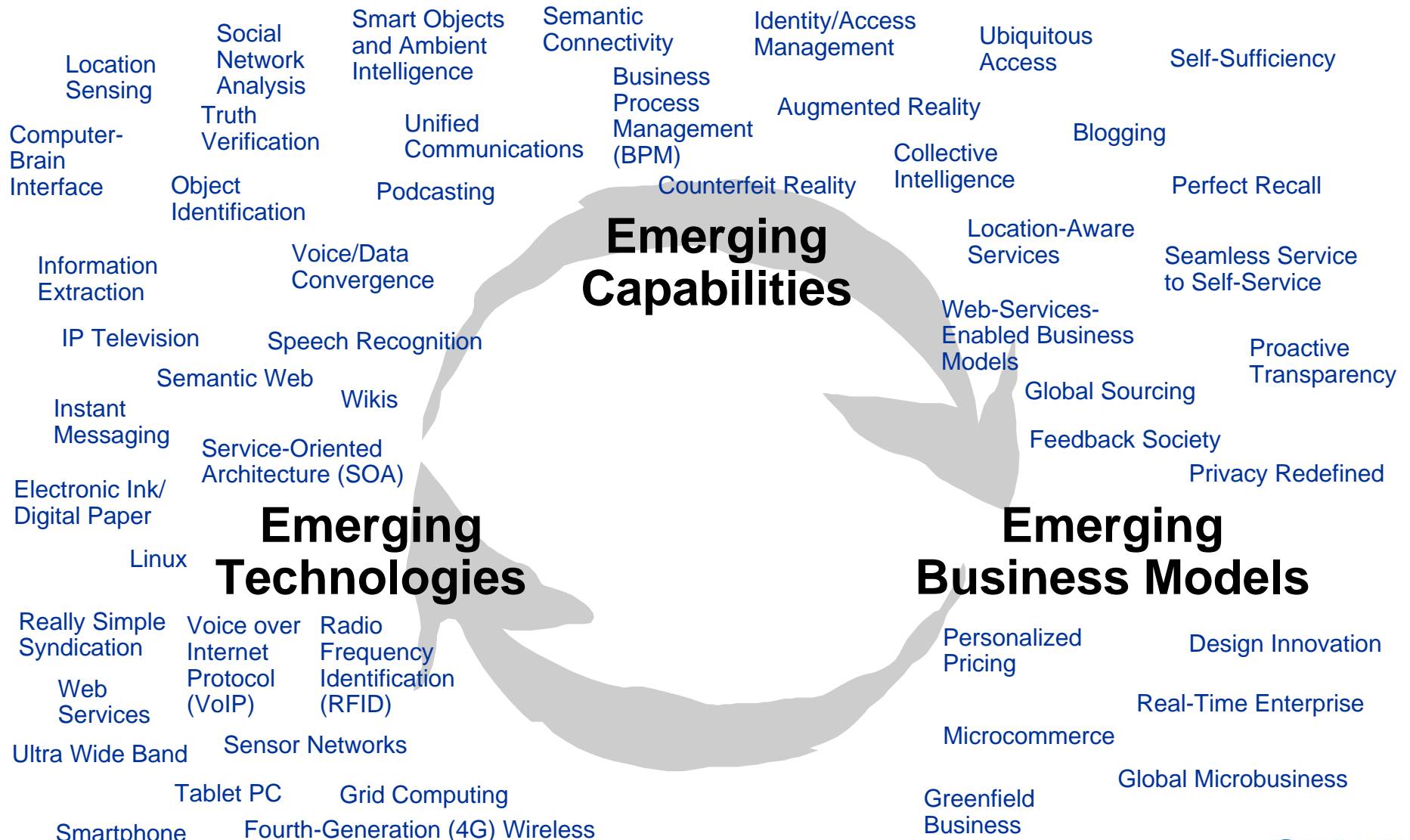
## Emerging Trends, 2010 to 2015



Jackie Fenn  
26 October 2005

**Gartner**

# Disruption: It's Not Just About Technologies



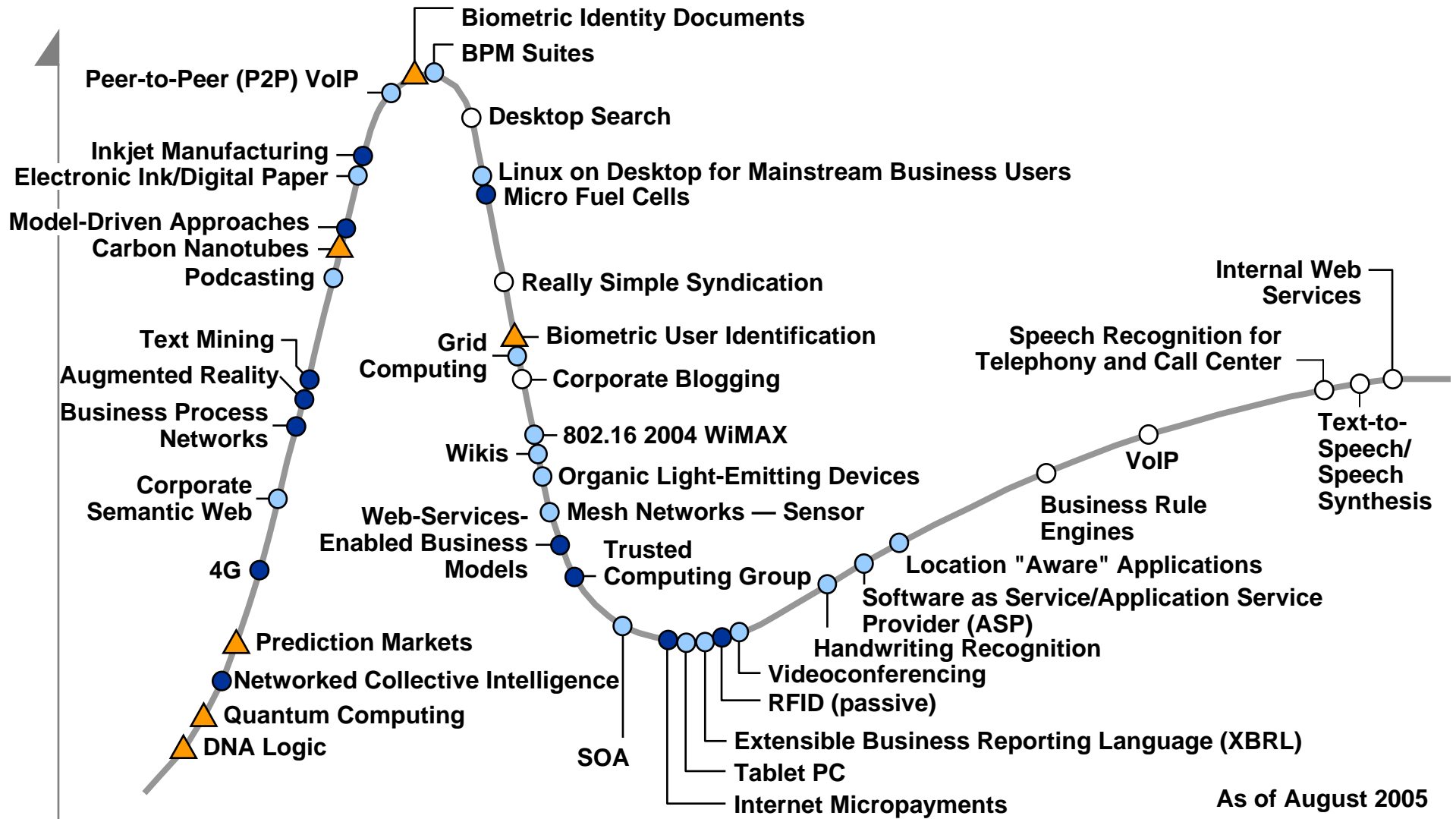
# Client Issues

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 identifying, prioritizing and introducing emerging technologies and trends?

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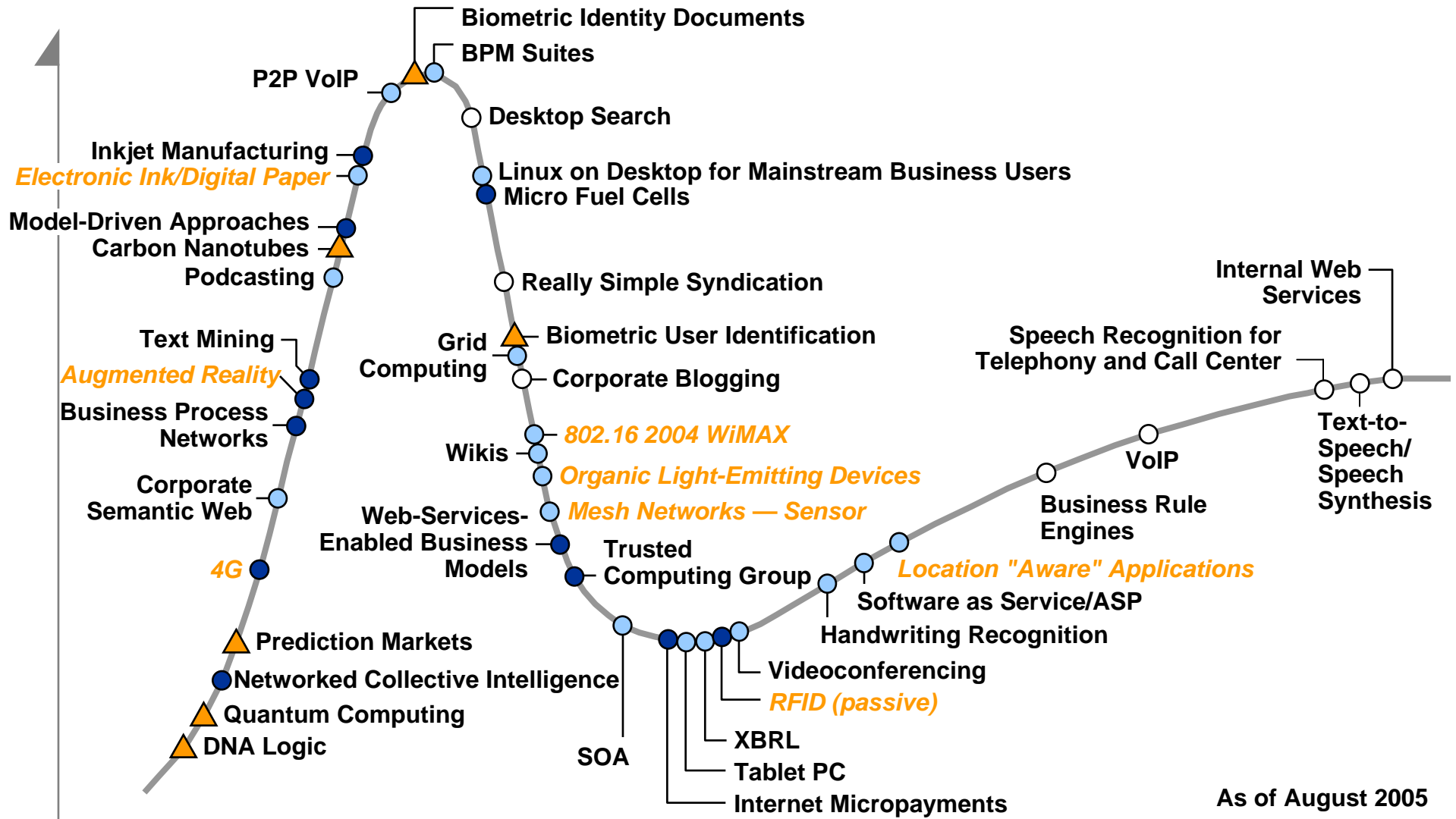
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# Hype Cycle for Emerging Technologies, 2005



(From "Hype Cycle for Emerging Technologies, 2005," 3 August 2005)

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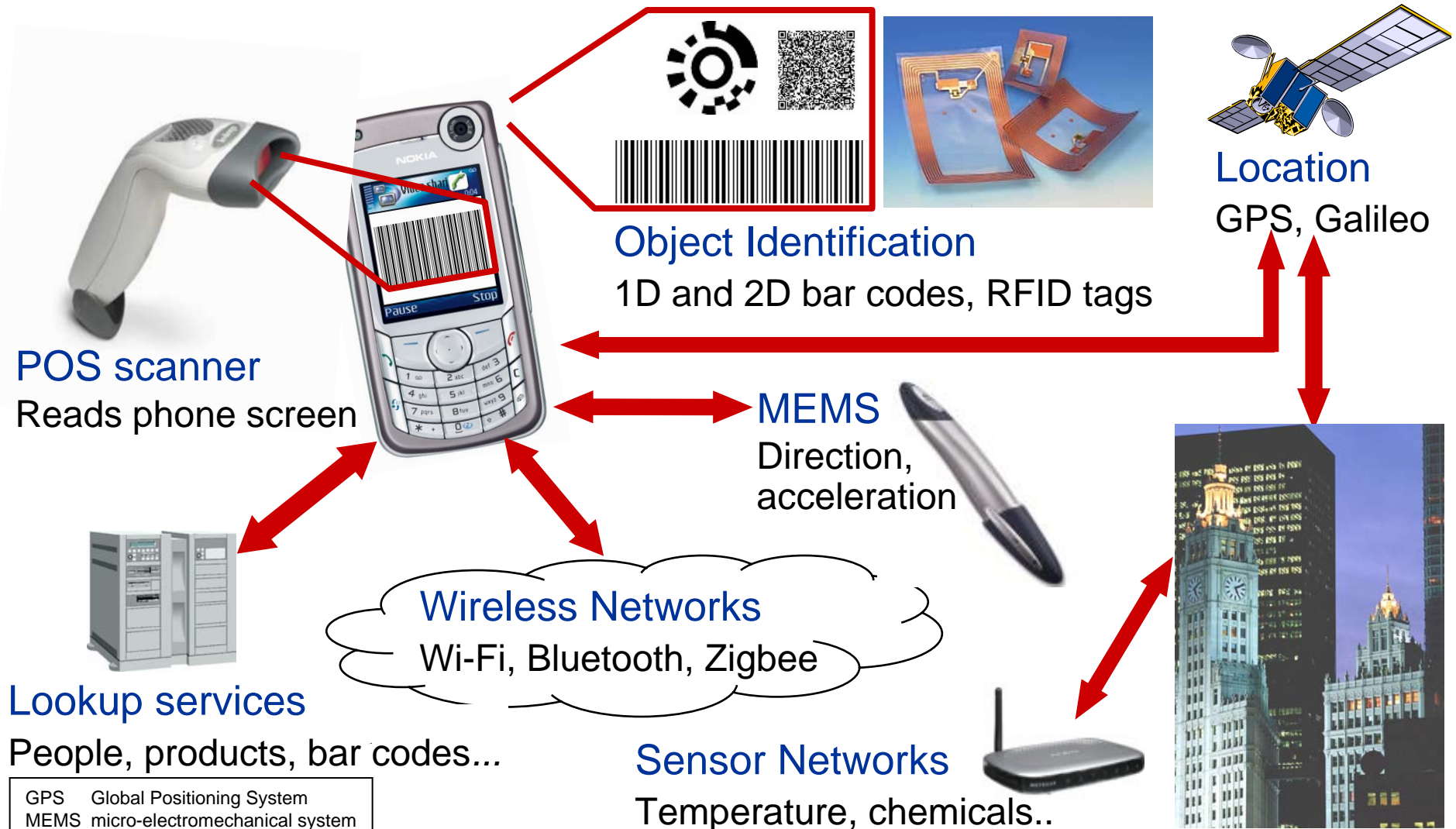
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# Hot Spots in Emerging Trends



**Objects and Places:  
Building the Real-World Web**

# Building the Real-World Web: Identifying, Sensing, Communicating



GPS Global Positioning System  
MEMS micro-electromechanical system  
POS point of sale

# Applications for the Real-World Web

## Smart Objects and Packaging

Know identity, location, owner, history, safety, environment ...

## Remote Sensing

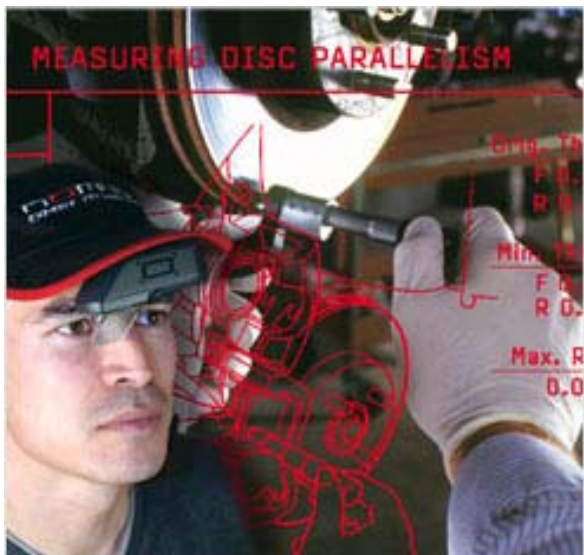
Tracking, control, compliance monitoring, healthcare

## Machine-to-Machine

Local distributed decisions and actions

## Behavior-Based Pricing Models

Usage, risk



## Augmented Reality

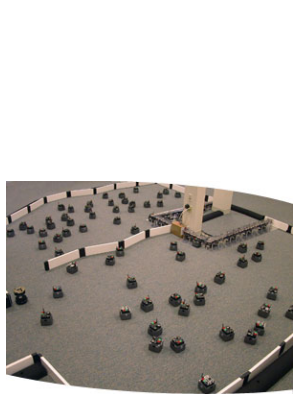
Context-based information at point of decision/action

## Sociable Products

Recognize owner, sensitive to context

Unifying Digital and Physical Worlds

# Mobile Robots Crawl Into the Mainstream



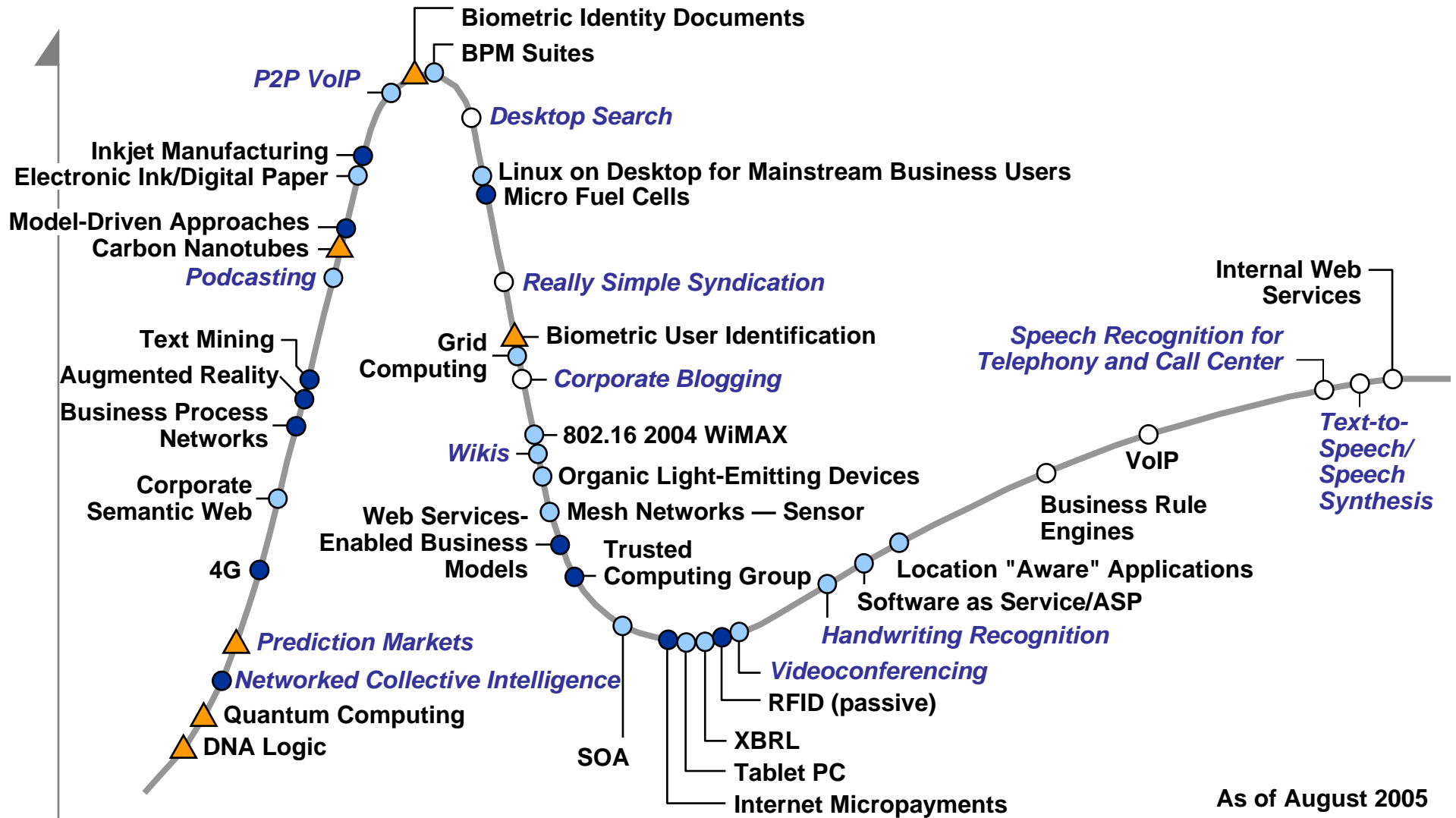
## Features

- Low cost
- Local or remote control
- Telepresence — see, control, communicate
- Humanoid
- Teaming

## Applications

- Entertainment
- Home services
- Healthcare
- Security
- Military
- Agriculture

# Hype Cycle for Emerging Technologies, 2005



As of August 2005

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# Hot Spots in Emerging Trends



Identifying, sensing,  
communicating

Mobile robots: Network  
nodes that move

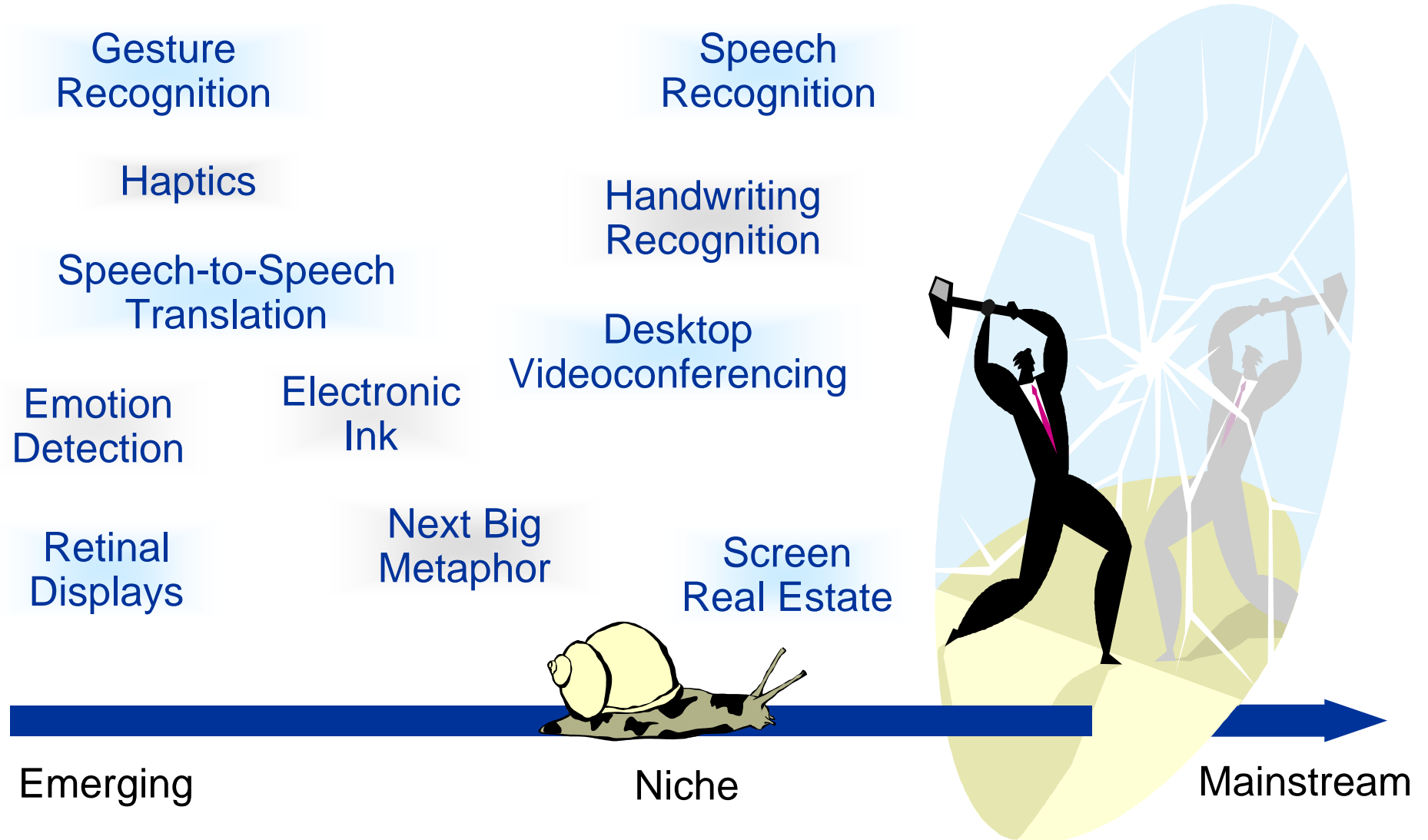
## **Objects and Places: Building the Real-World Web**

Context: Unifying  
physical and virtual



## **People and Community: Leveraging Connections**

# User Interfaces: Breaking the Price/Performance/Benefit/Usability Barrier



# Technology-Enabled Communities: Turning Connections Into Information

## Links as Information

Personalized recommendations  
Social network analysis

## People as Information

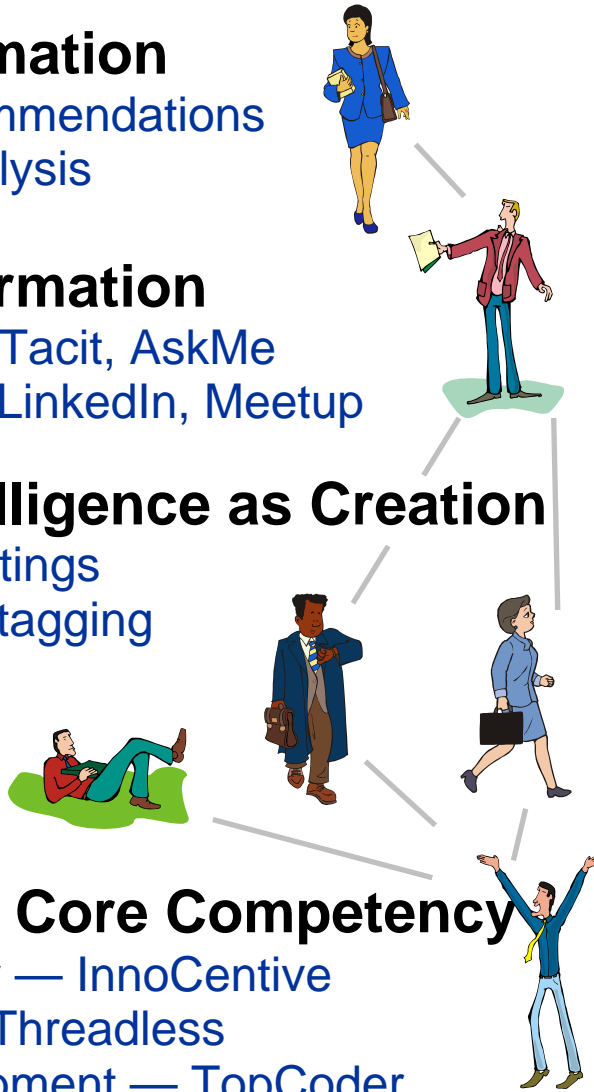
Expertise location: Tacit, AskMe  
Social networking: LinkedIn, Meetup

## Collective Intelligence as Creation

Quality and trust ratings  
Folksonomies and tagging  
Prediction markets  
Open Source  
Wikipedia

## Community as Core Competency

Scientific discovery — InnoCentive  
Product design — Threadless  
Application development — TopCoder



## New Information New Creative Sources

Leverage **implicit** contributions:  
buying, linking, clicking, searching

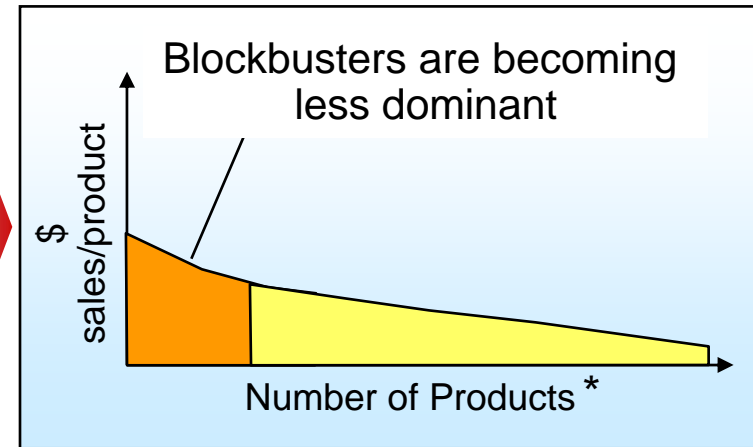
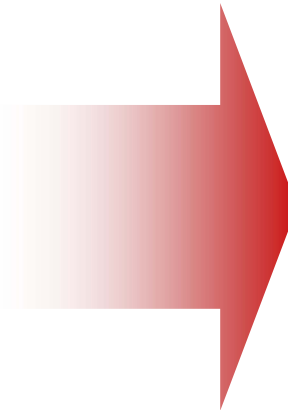
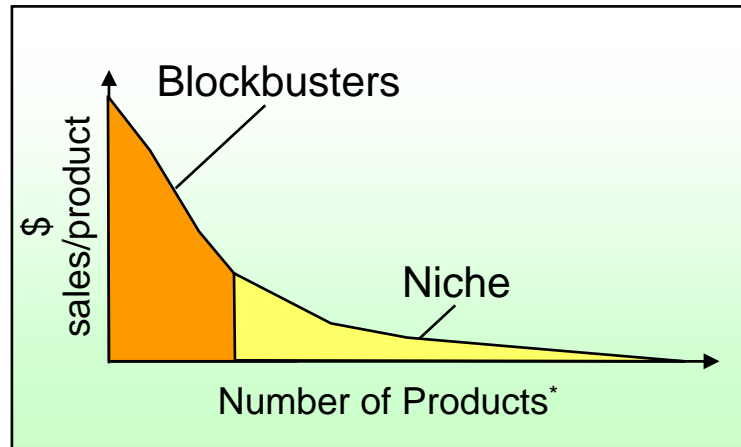
**Extend your enterprise** by using,  
or being, the new marketplaces

Leverage **networked collective  
intelligence** for improved  
quality/cost

Use the **power of scale** to solve  
old problems in new ways

Watch for "**one-click**" usability  
breakthroughs: blogs, wikis,  
file sharing

# The End of the 80/20 Rule: The Rise of the Niche Market



## Increased Reach of Consumers

- Sheer number of vir(tu)al communities
- Much improved search and discovery
- On-demand, push, choice

## "Infinite" Shelf Space

## Increased Reach of Businesses

- Decreased Web publication costs
- Granular context/content-based ads

For Topic Interests: Polarization and multiplicity

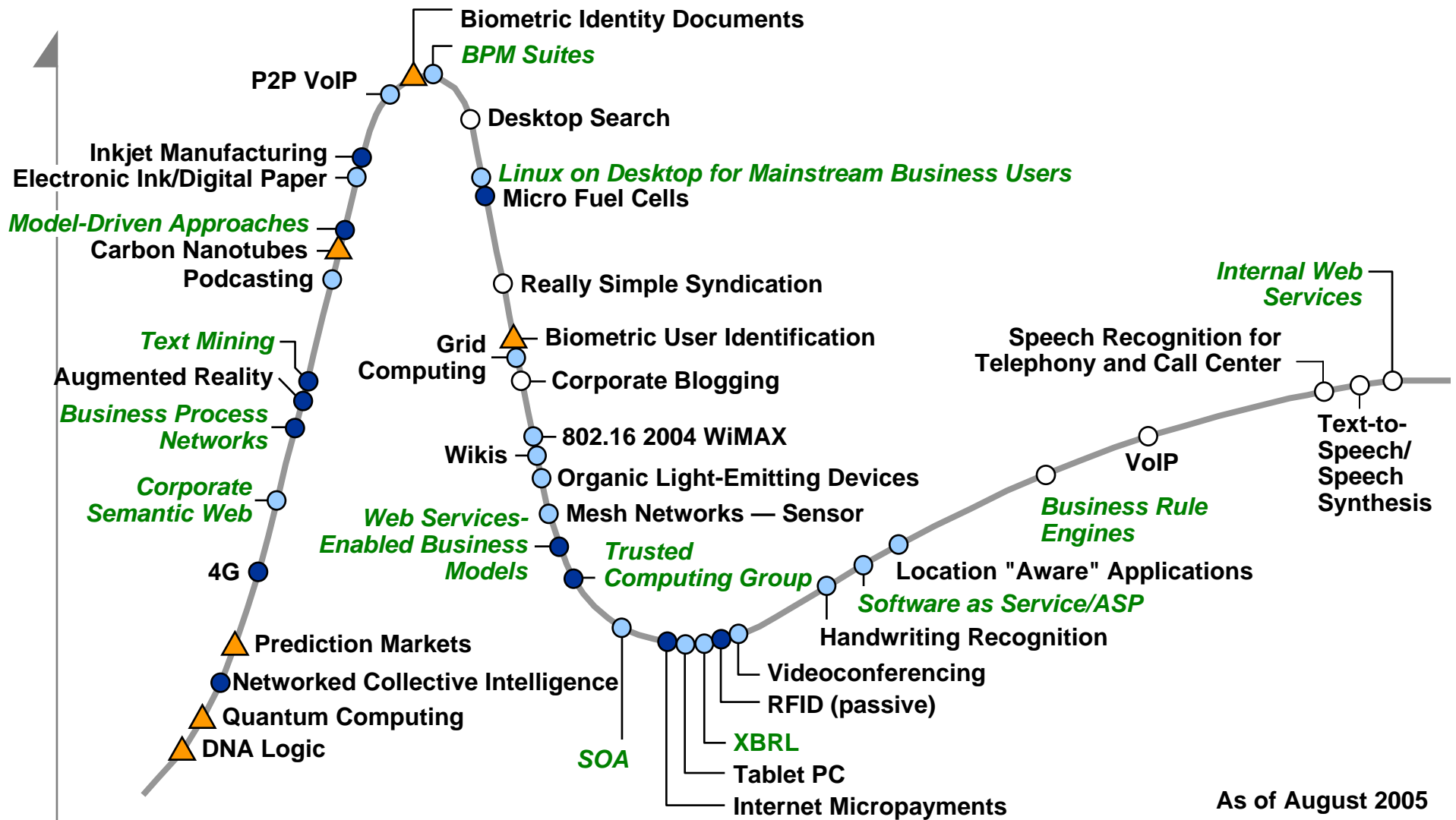
For Advertisement: Reflect new channels

For Niche Manufacturers: More \$\$

More choice → More competition

\* By decreasing sale

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## **Objects and Places: Building the Real-World Web**

Context: Unifying  
physical and virtual

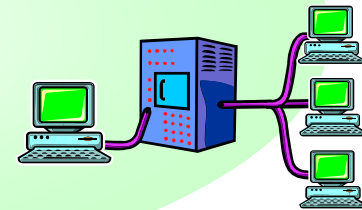
Connections  
as information  
Collective  
Intelligence: New  
creative sources



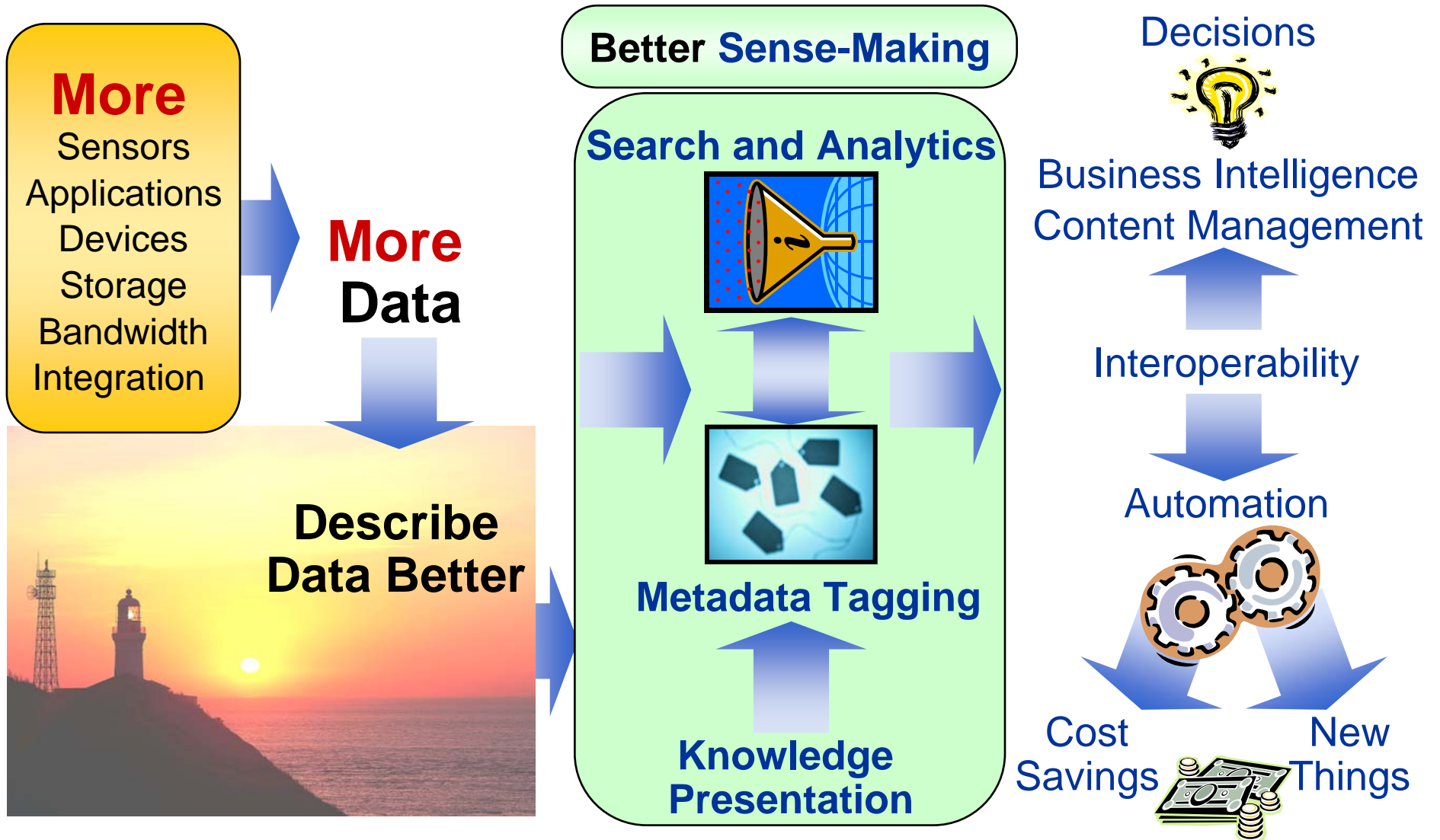
## **People and Community: Leveraging Connections**

Breaking user  
interface barriers

## **Redefining Data, Applications, Processes, Products and Enterprises**



# Understanding Data: From Raw Data to Automation and Insight



# Metadata Moves to Formal Logic

Metadata is expensive — reuse

Metadata can be about everything

Fully machine readable

**Small fragments** over complex descriptions

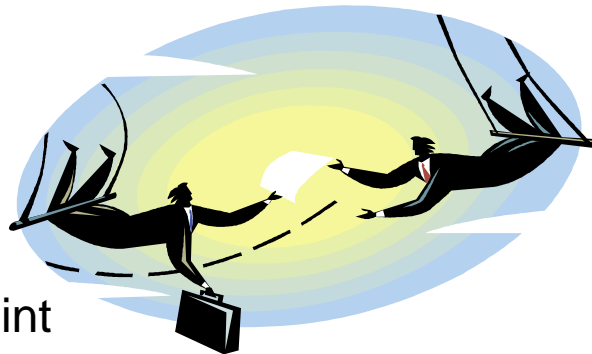
Metadata language must be **universal**

Metadata language must be **strictly formal**

## Moving Intelligence From Applications to Data

### RDF, OWL, SWRL, Common Logic

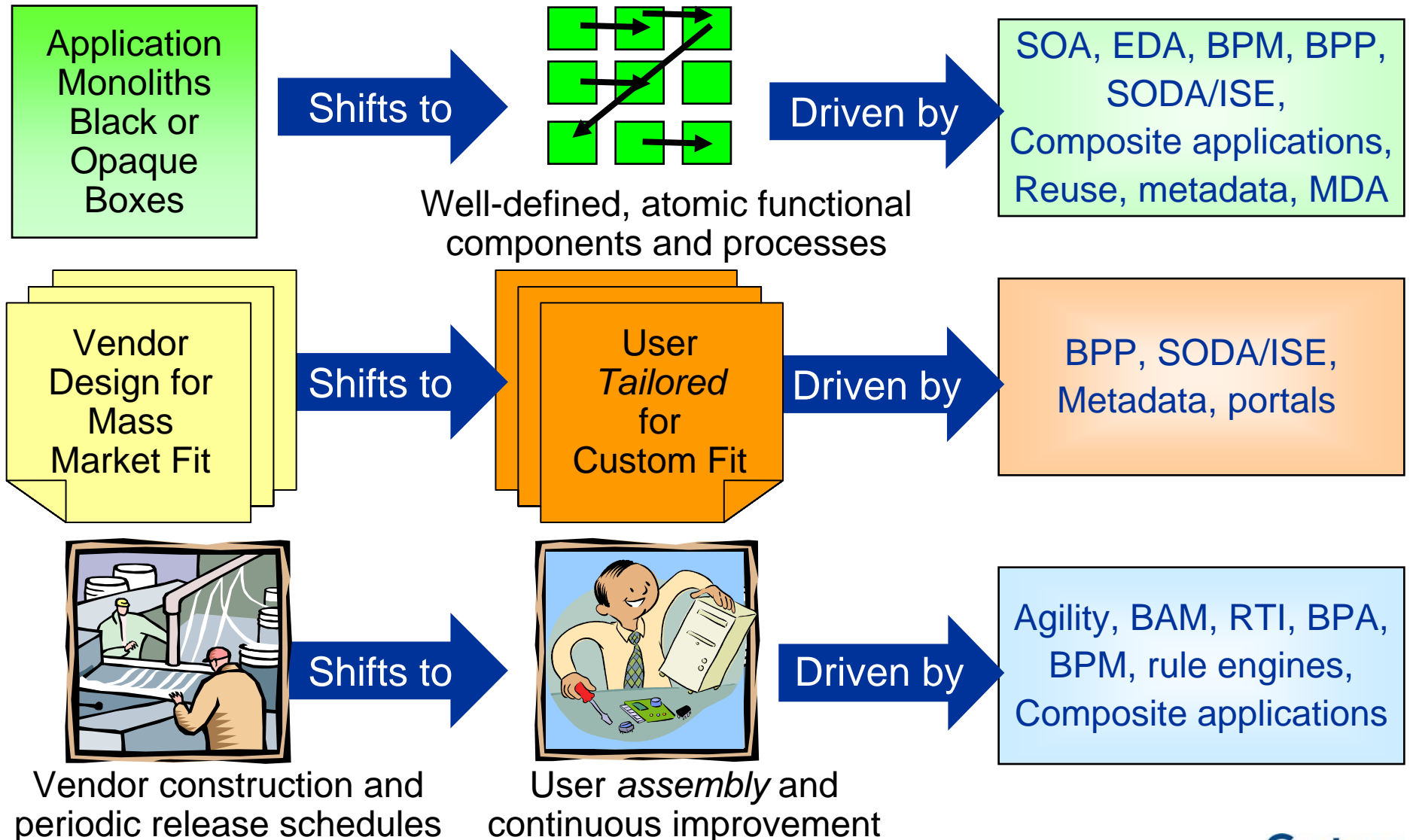
- + Reuse
- + Default inferencing
- + Mapping between terminologies
- + Powerful as a starting point



- Skill problems prevail
- Standardization is key — but is very slow

**Early Applications:** Content management, reporting, e-commerce, federated databases and enterprise information integration

# Applications Shift From Pre-Canned Logic to Dynamic Assemblies



# Hot Spots in Emerging Trends



Identifying, sensing, communicating

Mobile robots: Network nodes that move

## Objects and Places: Building the Real-World Web

Context: Unifying physical and virtual

Data as insight

Metadata as logic

## Redefining Data, Applications, Processes, Products and Enterprises

Unbundling business processes

Connections as information

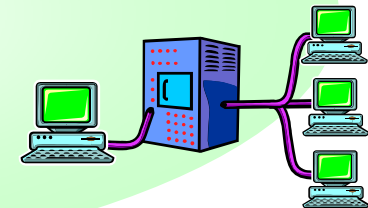
Collective Intelligence: New creative sources



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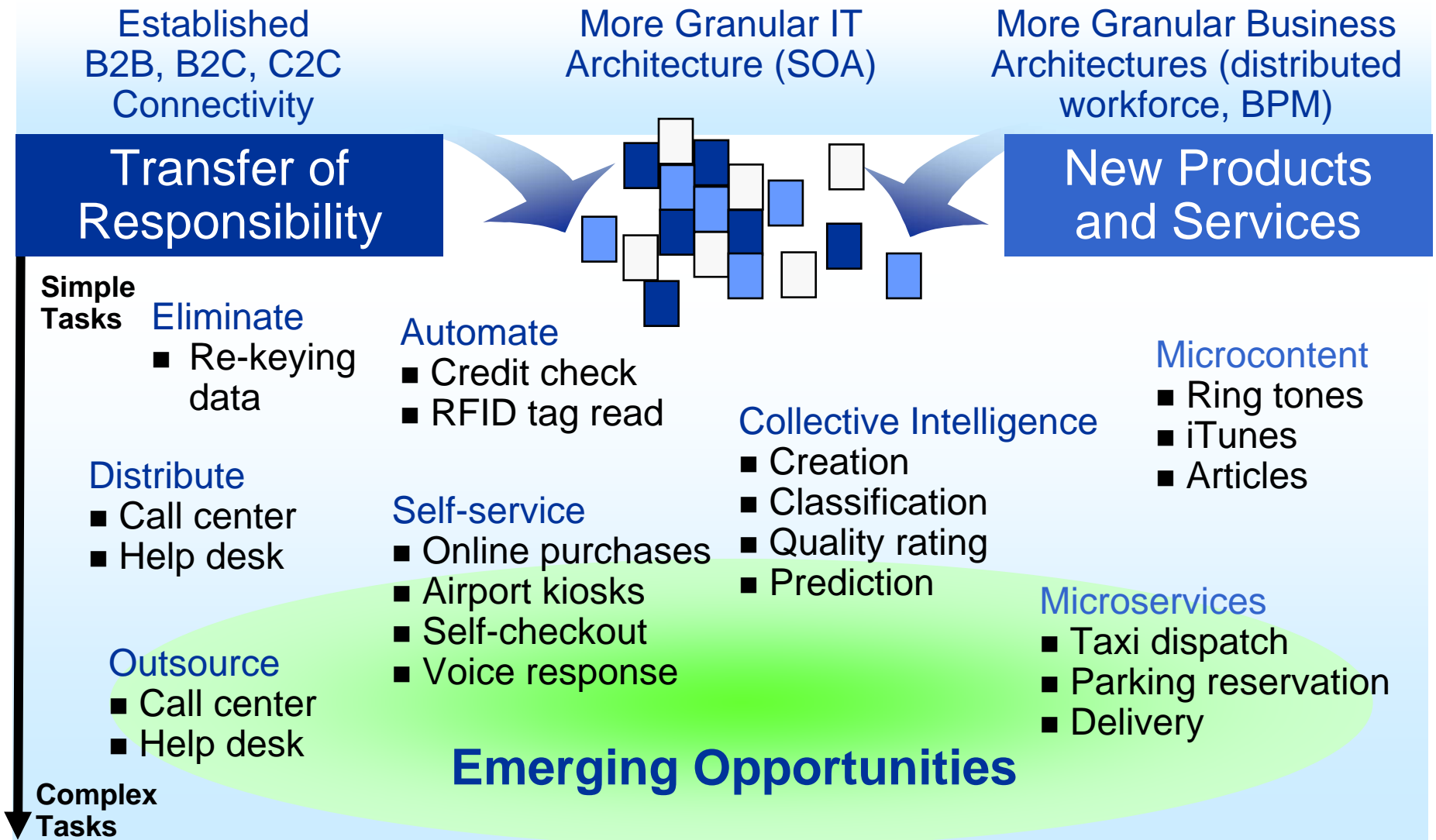
Agility through assembly



Connectivity

Granularity

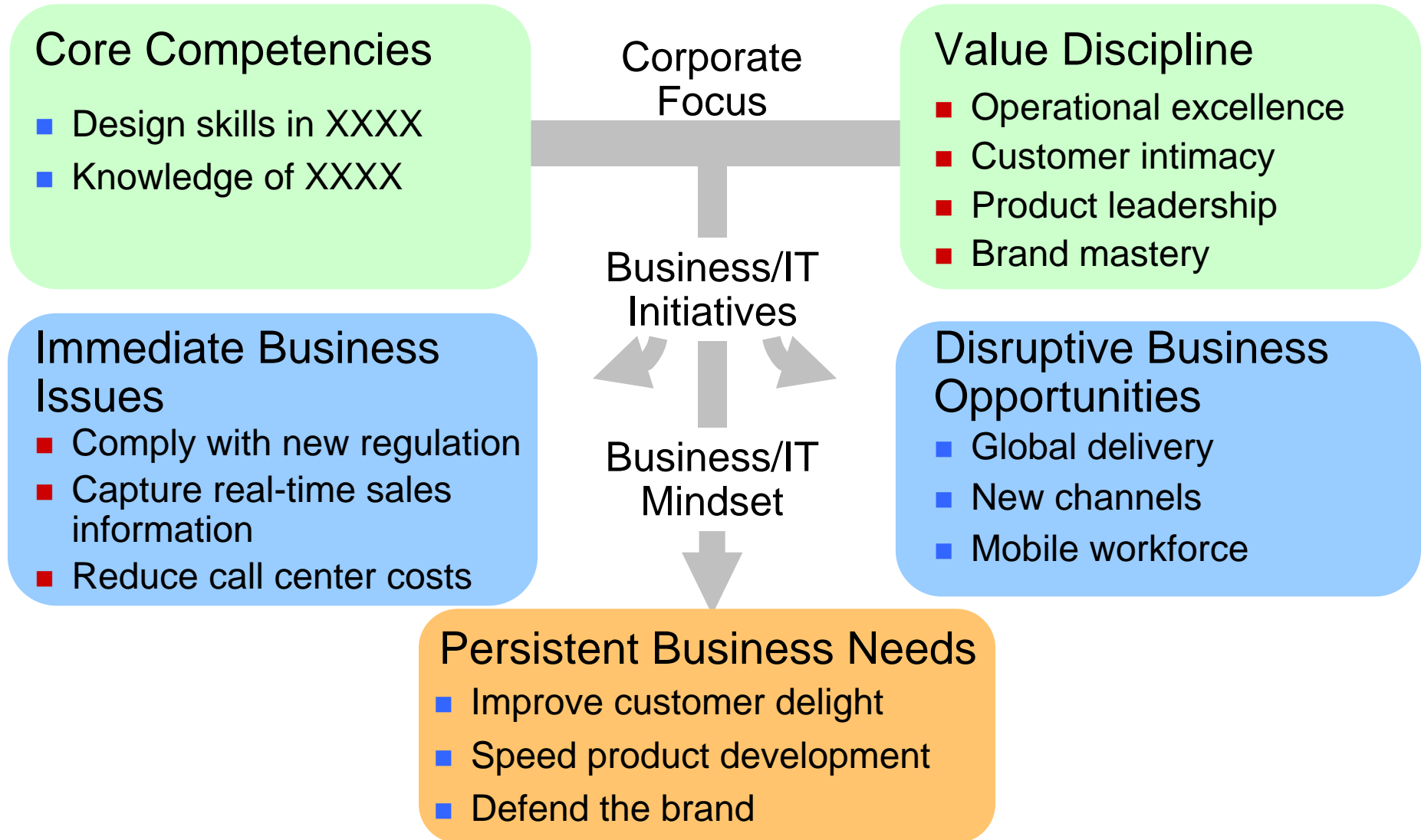
# Unbundling Business Processes: Connectivity + Granularity = Opportunity



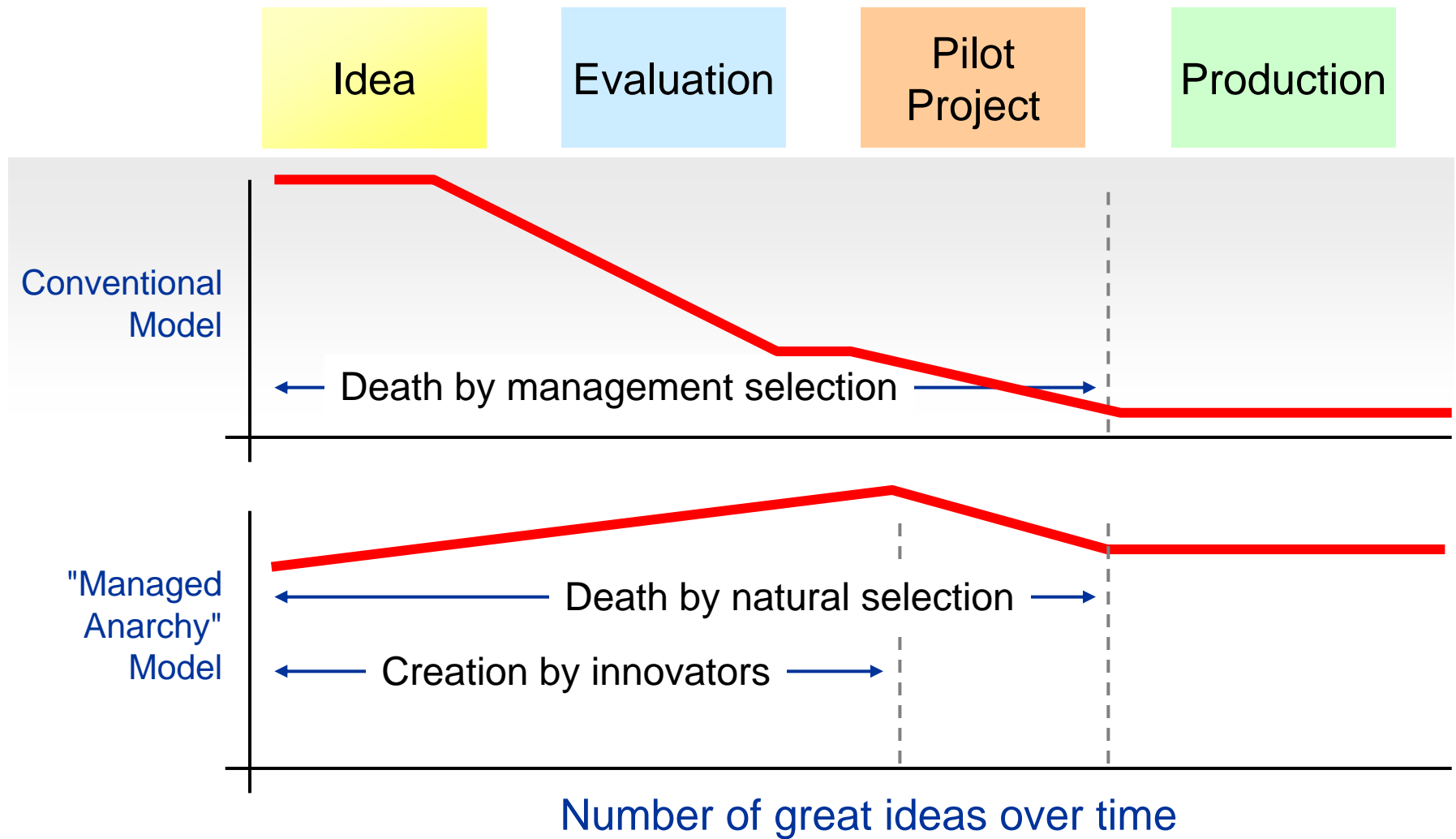
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# Focal Points for Emerging Technology Adoption



# Managed Anarchy Technology Adoption



# Recommendations

- ✓ Examine the disruptive potential from the Real-World Web in linking objects and places to the information universe.
- ✓ Leverage insights from new types of data and metadata, including people-to-people connectivity, and the creative potential of networked collective intelligence.
- ✓ Examine how fine-grained applications, processes, products and services can transform the operations and growth of your company.
- ✓ Identify the focal points for innovation in your company — where will the risk be justified?
- ✓ Balance top-down initiatives to identify and select high-impact opportunities with managed anarchy experimentation for personal productivity technology.

# Recommendations

"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, 1788 - 1860