

Apple's iPhone: An Application of Systematic Innovation (SI) for Growth Strategy

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Act 1 – iPhone: how it came to be, where will it go? –

Systematic Innovation (SI) Analysis – 25 min.

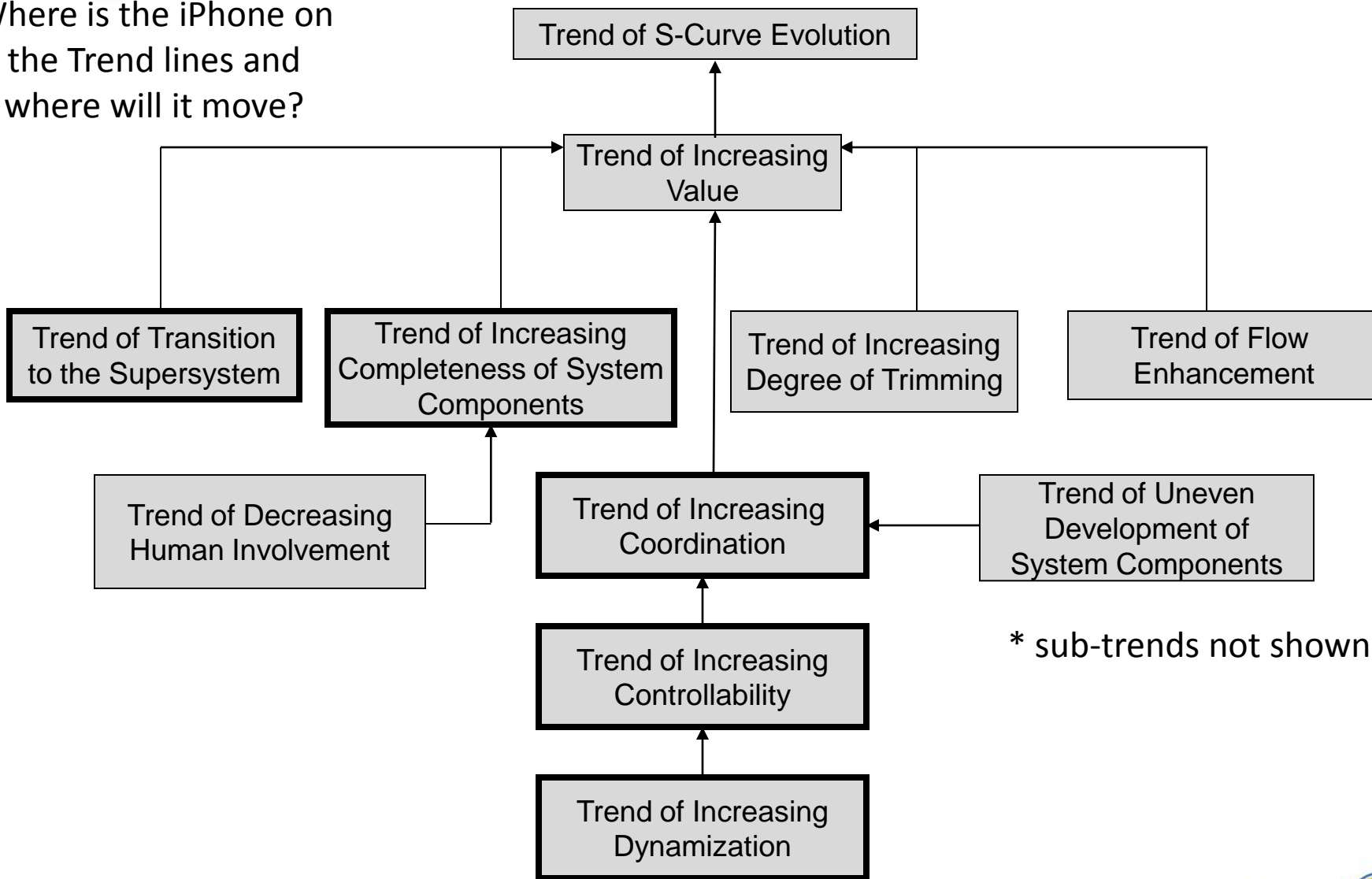
Act 2 – Tasking Methodology (relevant CI data) – 25 min.

Act 3 – Theory Application – 40 min.



Trends of Engineering System Evolution*

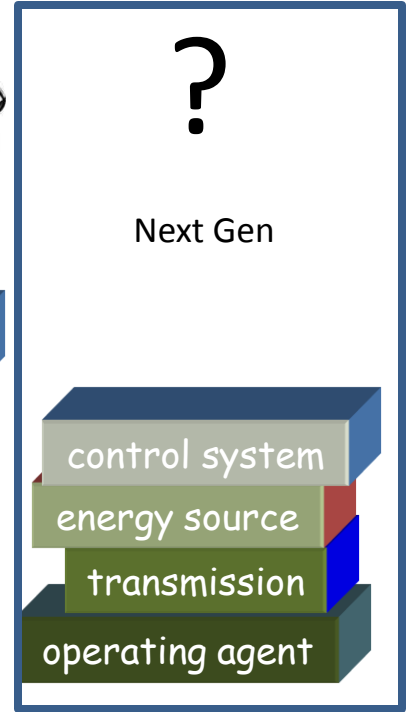
Where is the iPhone on
the Trend lines and
where will it move?



* sub-trends not shown

Trend of Increasing System Completeness

As an eng. system evolves the system becomes more complete.



Megaphone

Car Phone

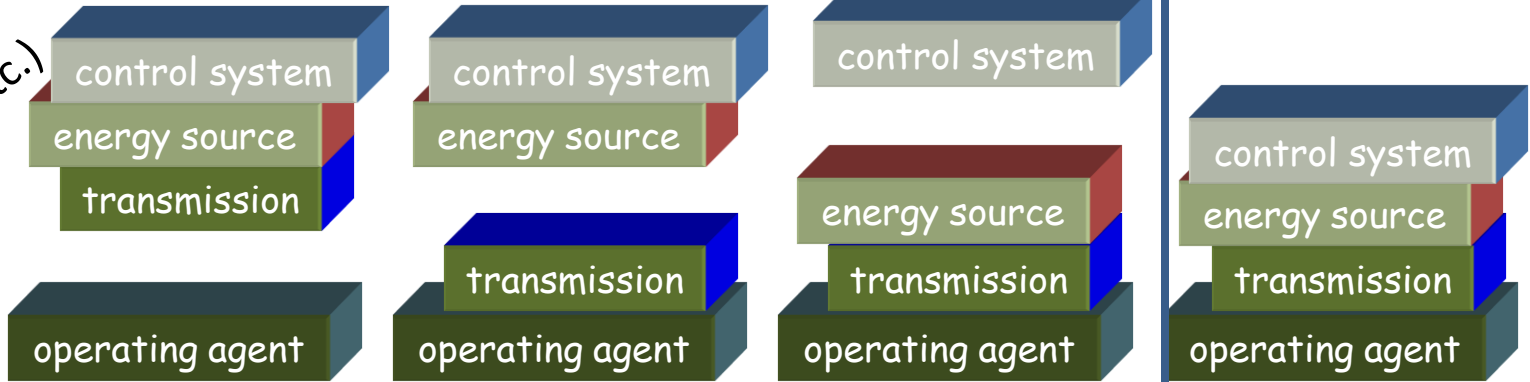
iPhone

Next Gen

Support System
(car, human, etc.)

Phone

time



Increasing System Completeness

Some of the control systems is already in the iPhone. How would the iPhone look and act if all (or more) of its control system was internal to the phone (i.e., no user control, dialing or texting)?

Trend of Transition to the Supersystem: Subtrend 4 – Increased Integrated Systems

As an eng. system evolves
other system increasingly
integrate with it.



?

Next Gen

Super Poly - System

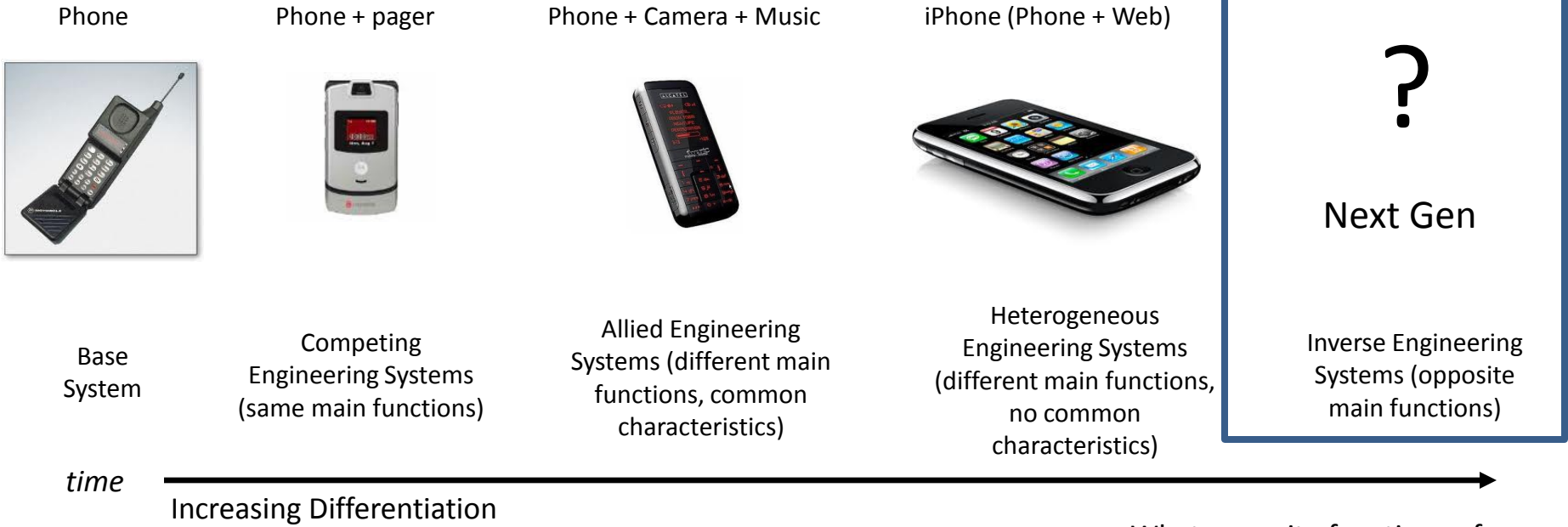


What other functions would
consumers find useful in the
iPhone?

Trend of Transition to the Supersystem: Subtrend 1 – Increasing Differentiation Between

Main Functions

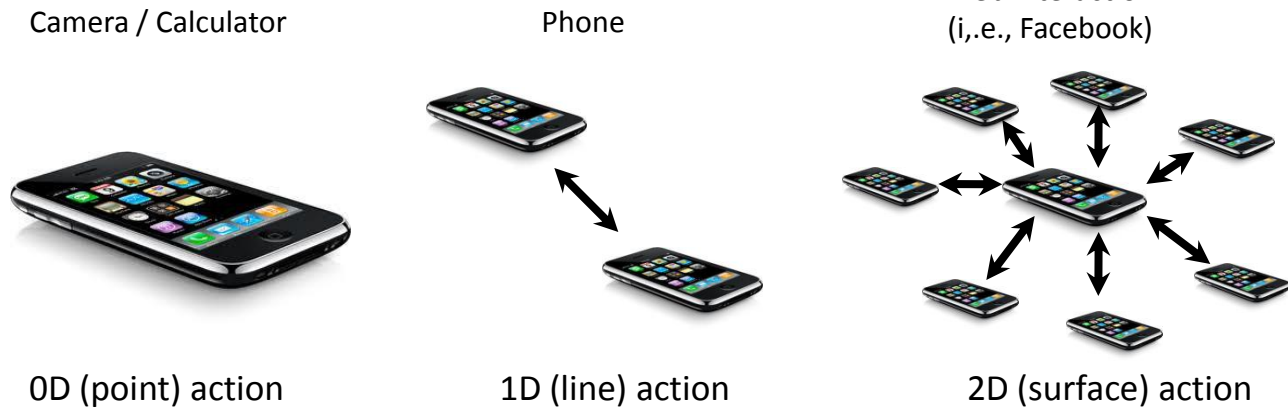
As an eng. system evolves
other systems integrate with
it as follows:



What opposite functions of
communication,
entertainment, etc. would be
useful to iPhone users?

Trend of Increasing Coordination: Subtrend 4 – Coordinate Action

As an eng. system evolves its actions become more coordinated w/ other sys.



?

Next Gen

3D (volume) action

0D-1D-2D-3D

time →

Increasing Connectivity

What would 3D connectivity look like?

Trend of Increasing Controllability:

Subtrend 1 –

Increase Level of Control

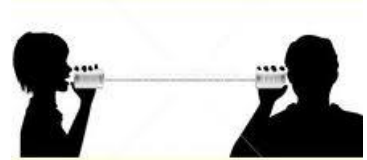
As an eng. system evolves its control continues to increase.

PA System



Uncontrolled system

Fixed Point to Point



Fixed program

“Externally”
Dialed iPhone

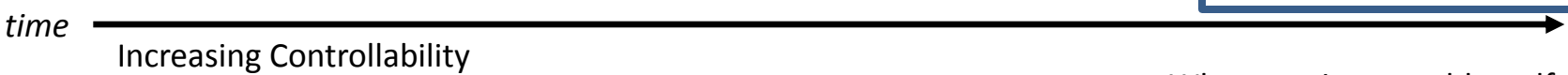


Externally controlled

?

Next Gen

Self-controlled system



What services would a self-controlled iPhone provide?

Trend of Increasing Dynamization: Subtrend 1B – Field Dynamization

As an eng. system evolves its associated “fields” become more dynamic.



Constant field

“Tunable” /
Coordinated
Frequency (iPhone)



Resonant field

?

Next Gen

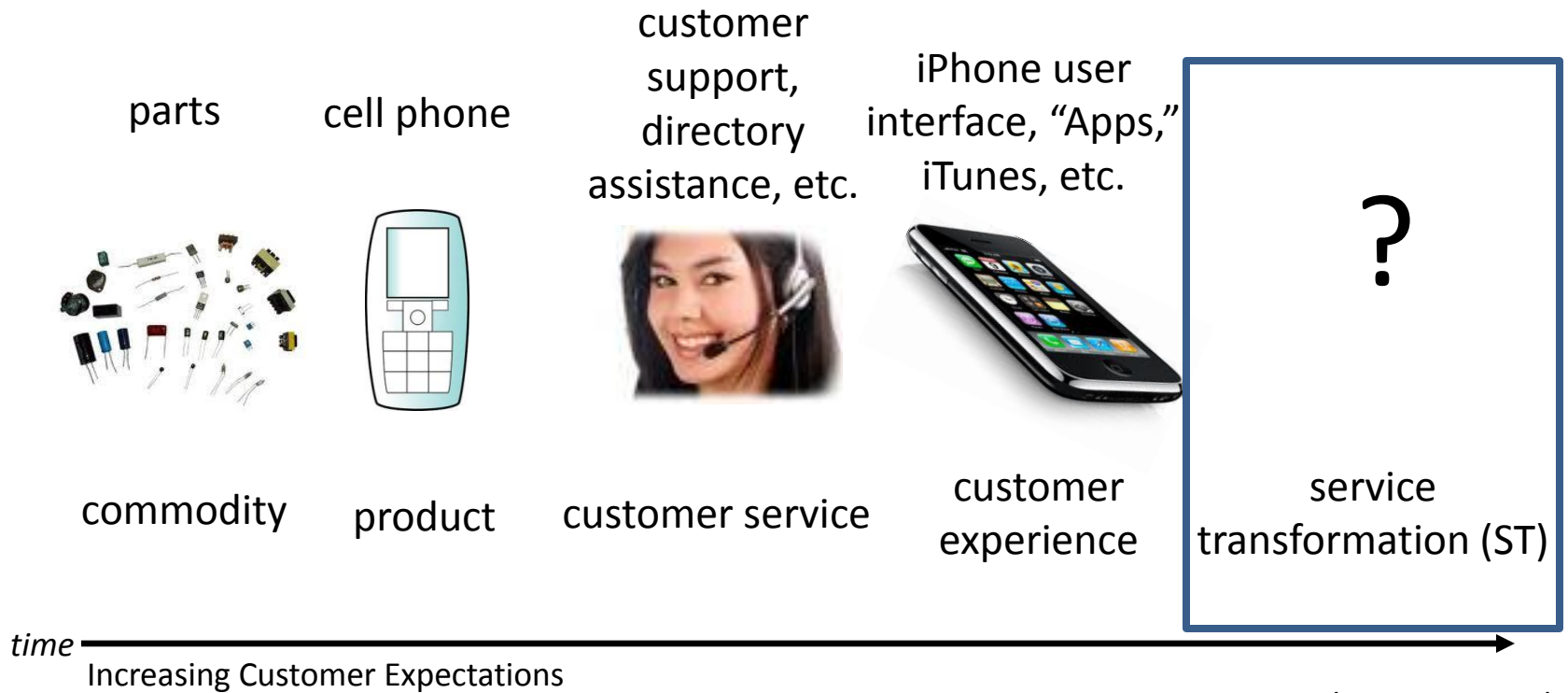
Interference
field



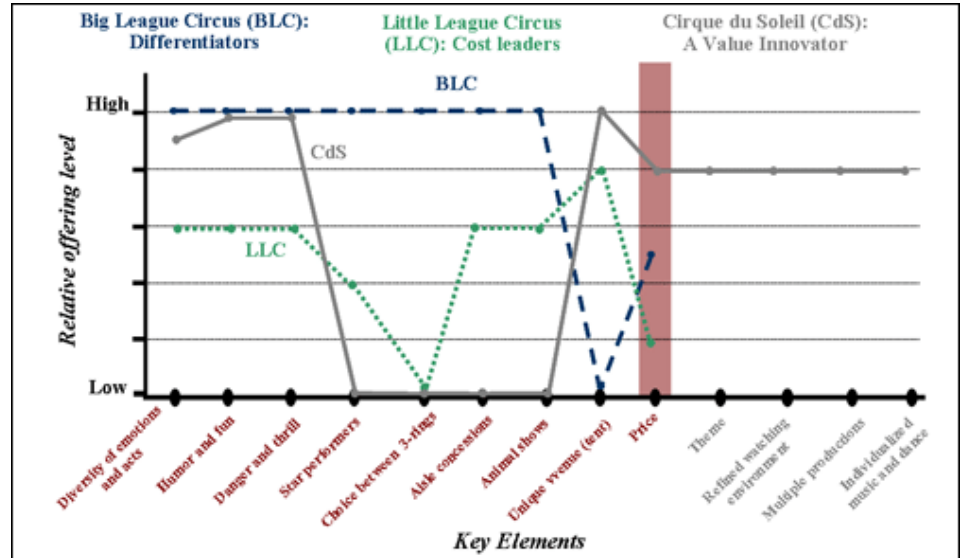
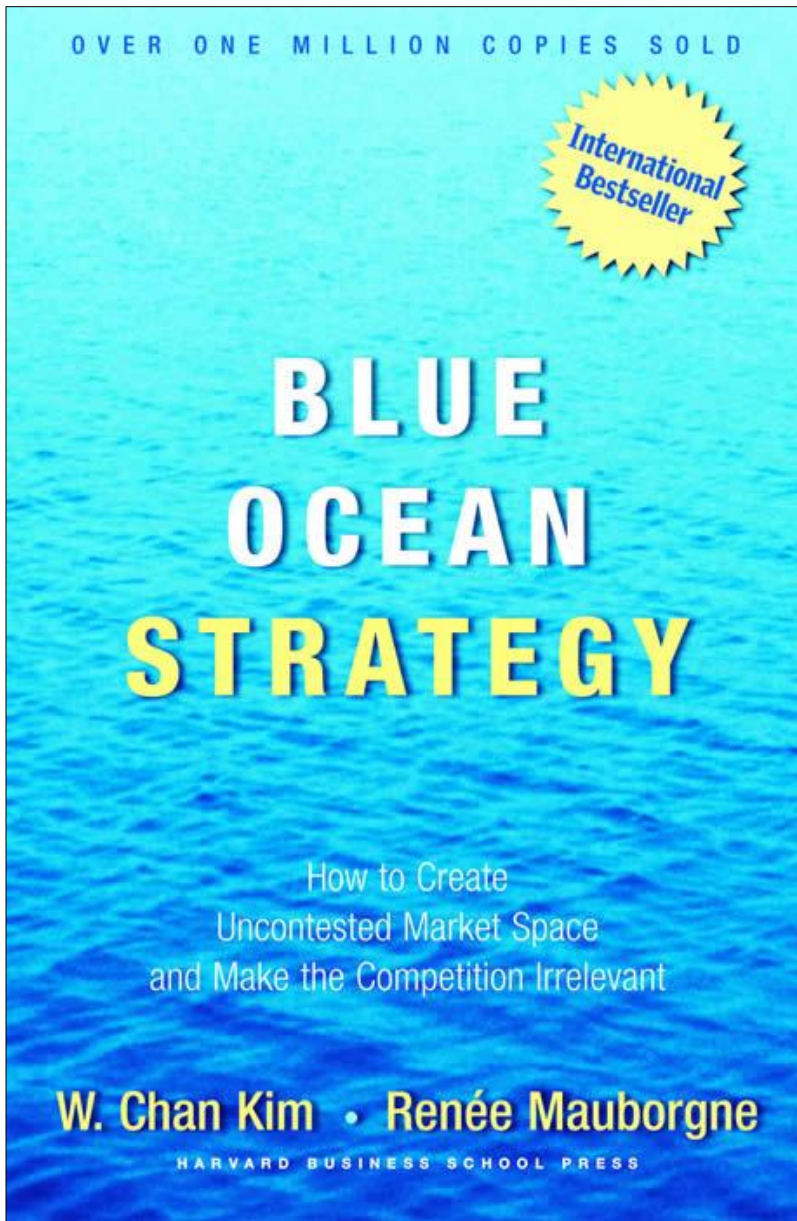
What would the addition of an Interference “field” enable?

Business: Trend of Increasing Customer Expectations

As a business evolves its customer's expectations increase.



ST is providing customized services suggested by the business. What would super customization look like in an iPhone?

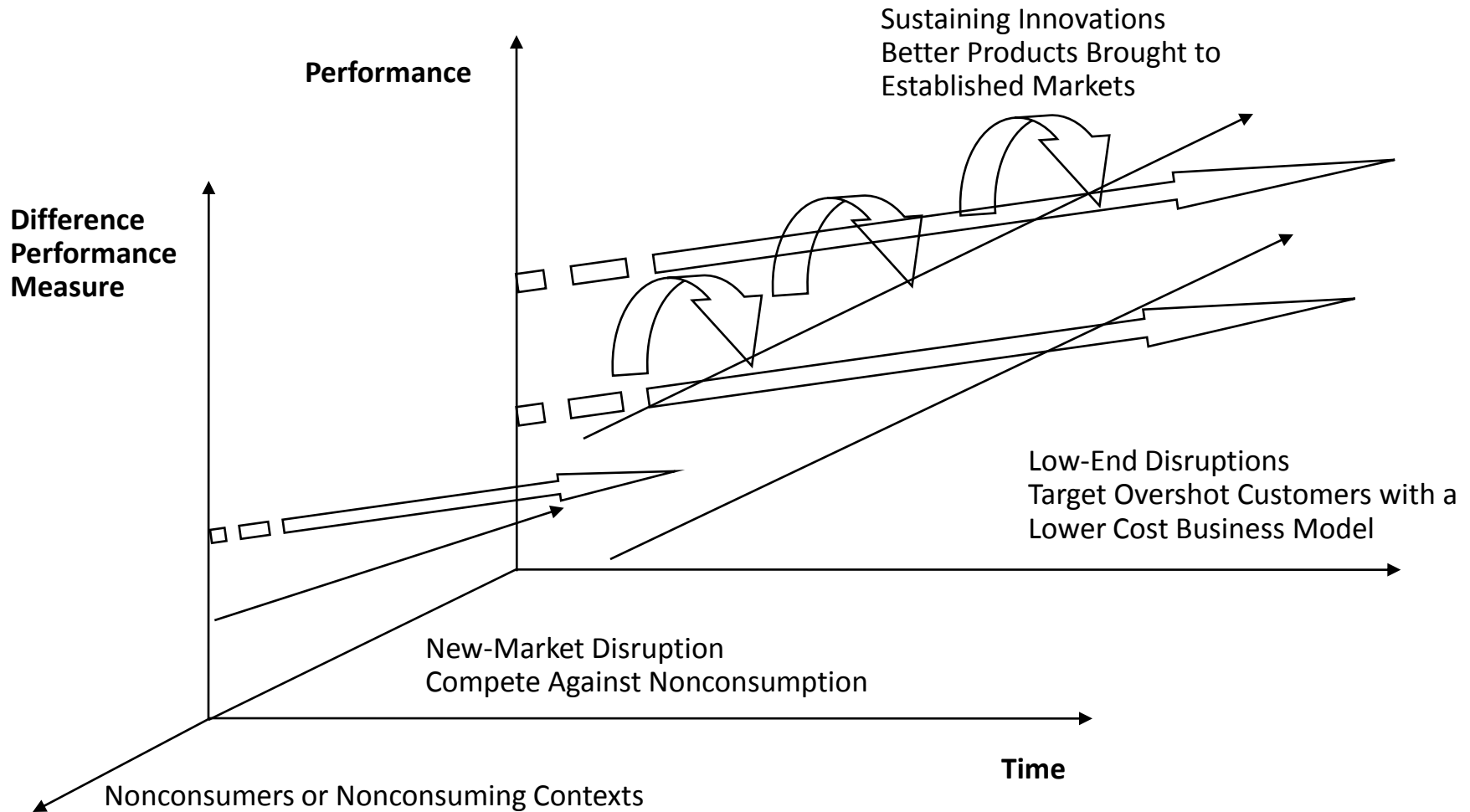


Competing head-to-head can be cutthroat especially when markets are flat or growing slowly.

Managers caught in this kind of competition almost universally say they dislike it and wish they could find a better alternative. They often know instinctively that innovation is the only way they can break free from the pack. But they simply don't know where to begin.

Chan Kim and Renee Mauborgne

Disruptive Innovation Theory



Customer Demand & Signals of Change

1. Non-Market Contexts: External Forces (Government, Economics, etc.) Increasing or Decreasing Barriers to Innovation
2. Undershot Consumers: Opportunities for Up-Market Sustaining Innovations
3. Overshot Consumers: Opportunities for Low-End Disruption, Shifting Profits by Specialist Displacements (Modularity) and the Emergence of Rules
4. Non-Consumers: Opportunities for New Market Disruptive Growth

Established Companies almost always

Lose to Disruptive Innovators

Consumers buy functions not products – are there disruptive ways to deliver your company's function?

Intelligence 2.0

The Era of Asymmetric Interpretation

- Intelligence 1.0 was about acquiring short-lived information advantages (Competitive Advantage through Asymmetries of Information), though fleeting and risky to the firm's reputation and ethics.
- The transition is now complete to an open source world of "info-glut" where asymmetric information gaps are increasingly difficult to obtain and maintain and interpretation becomes far more important as everyone looks at the same corpus of data but sees something different.
- Web 2.0 and Enterprise 2.0 pinpoint a shift in organizational culture – the “Facebooking” of the workforce means everyone in the enterprise can become a casually-engaged virtual member of the intelligence apparatus and should be instructed how to help most productively.
- Intelligence will extend into aspects of organizational culture and workforce engagement – which I differentiate from full-time intelligence staff as “reconnaissance” – but centralized, specialist intelligence staff will persist and embed themselves into the domains of organizational problem-solving.

RECON

Intelligence Should Concentrate on
Five Domains of Business Problem Solving

1. RISK
2. EFFICIENCY
3. CUSTOMERS
4. OUTLOOK
5. NOVELTY

RISK

Ensuring against risk to the core business is critical to making sure there is time for investments in new growth to start paying off. Maintaining a positive status quo by protecting the core is the chief role for managers in every business, with one caveat: good businesses can often be the foremost enemy of great businesses.

Cannibalization of a company's current market share should not exclude innovative ideas that might be foreign to the corporate immune system.

Applicable Systematic Innovation Tools:

Trend of Engineering System (product) Evolution (TESE) Analysis*
Engineering System (product) Functional Analysis

* Discussed in Act 1

EFFICIENCY

The ruthless cutting away of unnecessary costs in the value chain is essential for a new market innovation strategy to work. Create or build up that which is not yet good enough and diminish or destroy that which is unnecessary.

Most of the unnecessary elements in the incumbent value chain have long-since outlived their usefulness or were never very important to customers in the first place.

Applicable Systematic Innovation Tools:

Technical and/or Business *Process Analysis*

Technical and/or Business *Process Trimming*

CUSTOMERS

Companies become too dependent on their best customers' input for signals about how they should innovate, but new forms of competition usually present themselves at the current consumption market.

The day your customers begin complaining about how complicated or expensive or difficult your product is, you should ask, “why was it good enough for them yesterday” and who has offered an alternative?

Applicable Systematic Innovation Tools:
Trend of Increasing Customer Expectations*
“Other” Business Trends Analysis

* Discussed in Act 1

OUTLOOK

Traditional market segmentation based on demographic, geographic or sociographic data are fleeting at best and illusory at worst and many decisions have been based on flawed definitions of the fastest growing markets.

Defining the market by the “jobs” customers wish to accomplish is more helpful in defining fast growing target markets. Focus groups are often the worst mechanism of market testing.

Applicable Systematic Innovation Tools:

Determining Other “Ways” to create your Function (“job”)

Product Functional (“jobs”) Analysis

Function (“job”) Focused TESE Analysis*

Determining what Functions (“jobs”) people need done

Business Trends Analysis

* Discussed in Act 1

NOVELTY

Differentiation is mandatory for all organizations to master and new market or “novel” solutions to customer problems are often ecosystems of providers working together to produce sought-after value.

Companies must build a business model designed to test breakthroughs in the market more regularly but kill off those that do not work early on, so support and development resources can be allocated to those that do.

Applicable Systematic Innovation Tools:

Business Process Analysis and Optimization
Function (“job”) Focused TESE Analysis*

* Discussed in Act 1



Application

At your table (in small groups) use the information from the engineering and business trends along with the information from Tasking Methodology to create a plan for the technical and business advancement of the iPhone and its associated services. You have 20 minutes plus 20 minutes for report out.

Hints:

- 1.) Technical and Business Trends can be combined for accelerated market effect
- 2.) Look for multiple Trends suggesting similar movement - *recurring signals provide impetus to move in that direction*
- 3.) Understanding how Relevant CI Data (Act 2) interfaces with analysis tools (Act1) and provides insight into direction and strategy



Arik Johnson
*Aurora WDC Founder & Chairman
Managing Director*

Arik Johnson founded Aurora WDC in 1995 and today serves as Chairman and Managing Director of Aurora's R&D lab and policy think tank, where he works with organizations of all kinds to develop their intelligence apparatus to anticipate, monitor, detect and interpret change in their business environment. Arik is a Fellow of the Society of Competitive Intelligence Professionals and has chaired SCIP's annual international conference in 2006, served on SCIP's board of directors from 2004 through 2006, won SCIP's Catalyst award in 2005, and earlier served as a chapter coordinator and most recently as a trustee and development committee chair of the CI Foundation. He moderates the 1000-member Competitive Intelligence community at www.CI2020.com is a frequent writer, speaker and facilitator at intelligence events throughout the world.

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David Conley
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Intel Corp. Innovation Management*

David Conley received his BS of Nuclear Engineering from Texas A&M University and his Masters of Finance from the University of New Mexico. As an Air Force Officer he performed plasma physics and space nuclear propulsion research and served at Los Alamos and Brookhaven National Laboratories and on NASA's Nuclear Safety Panel. His private sector experience includes Johnson and Johnson, Philips Semiconductor and Intel Corporation. Employee at Intel since 1995 David has held a variety of engineering and management roles including Competitive Intelligence Analyst. Certified by the St. Petersburg school of the International TRIZ Association, David's contributions to the field of systematic innovation include: technical and business problem solving, methodology training, program integration and serving on the Executive Board and the Certification Committee of the US based Altshuler Institute for TRIZ Studies.

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Notes:

Step 1 (Act 1 app.) - What product advancement ideas do the Trends suggest?

Trend of Inc. Sys. Completeness - page 3
Increased integrated Systems - page 4
Increased Diff. Between main Functions - page 5
Coordinated Action - page 6
Increased level of Control - page 7
Increasing Field Dynamization - page 8
Increasing Customer Expectations - page 9

	Step 2 (Act 2 app.) - What do the learnings from Tasking Methodology - Relevant CI Data suggest about strategy and direction?
Customer Demand & Signals of Change - page 12	
Reco - Risk - page 15	
Reco - Efficiency - page 16	
Reco - Customers - page 17	
Reco - Outlook - page 18	
Reco - Novelty - page 19	

Step 3 - What additional insights can be gained from considering Step 1 and Step 2 in tandem?