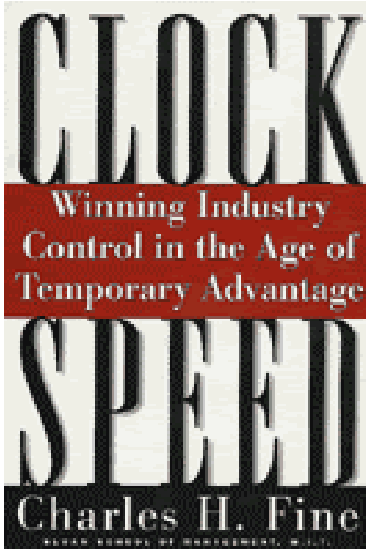
Core-Edge Oscillations and Value Chain Dynamics

Excerpts from



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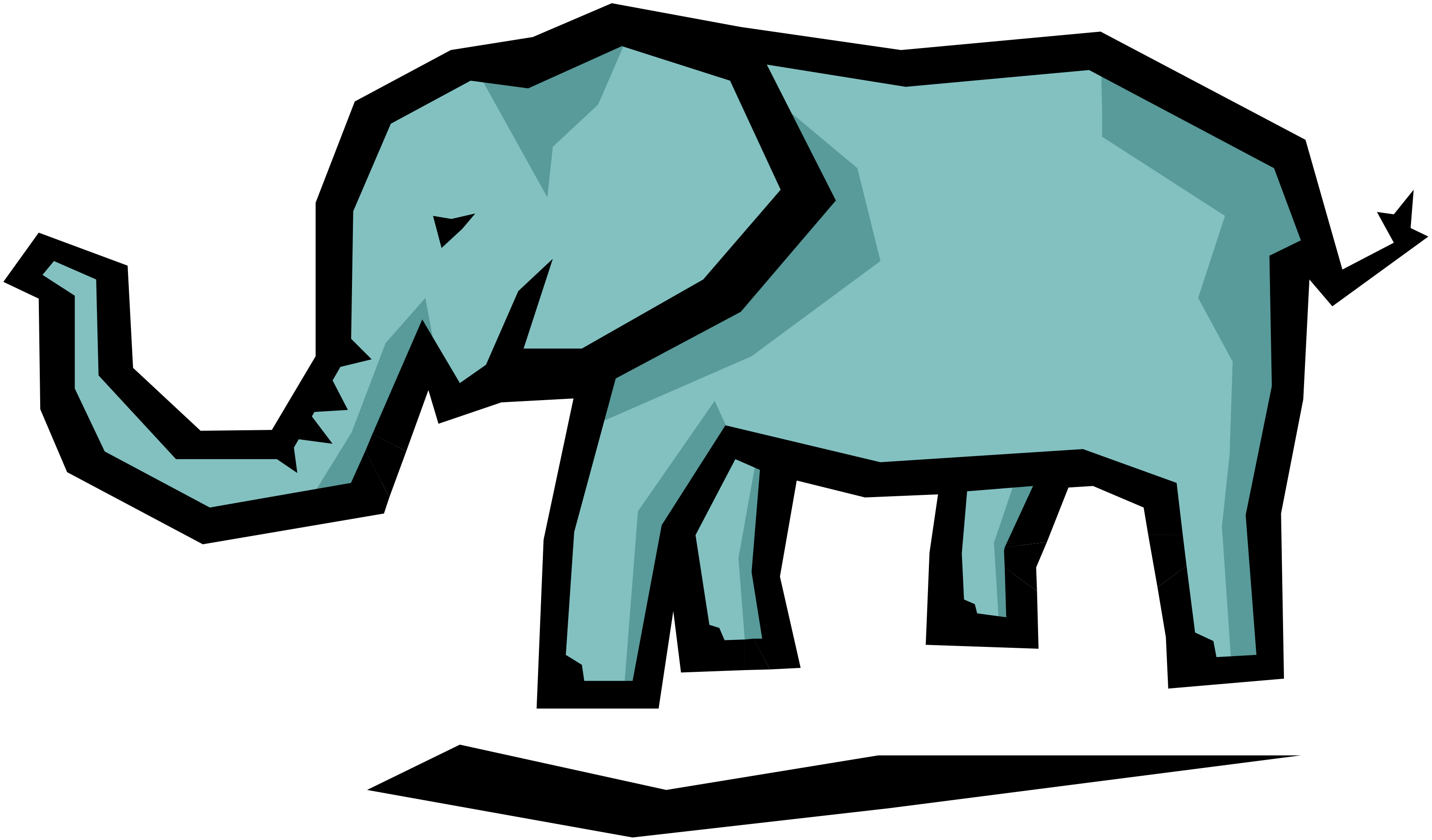
Communications/Media is the Elephant; Are we the Blind?



SHALL WE SLICE IT OR SWALLOW IT WHOLE?

SCENARIOS FOR COMMUNICATIONS FUTURES

Power focused in a centralized Core

WHICH "TREND" SHOULD YOU BET ON? HOW?

Public Utility **PTT**	**Closed networks** **Controlled end to end**
Public Wireless **OpenSpectrum** **Uncontested core**	**Intense** **core-edge** **dynamics**

Public provision and/or oversight of networks

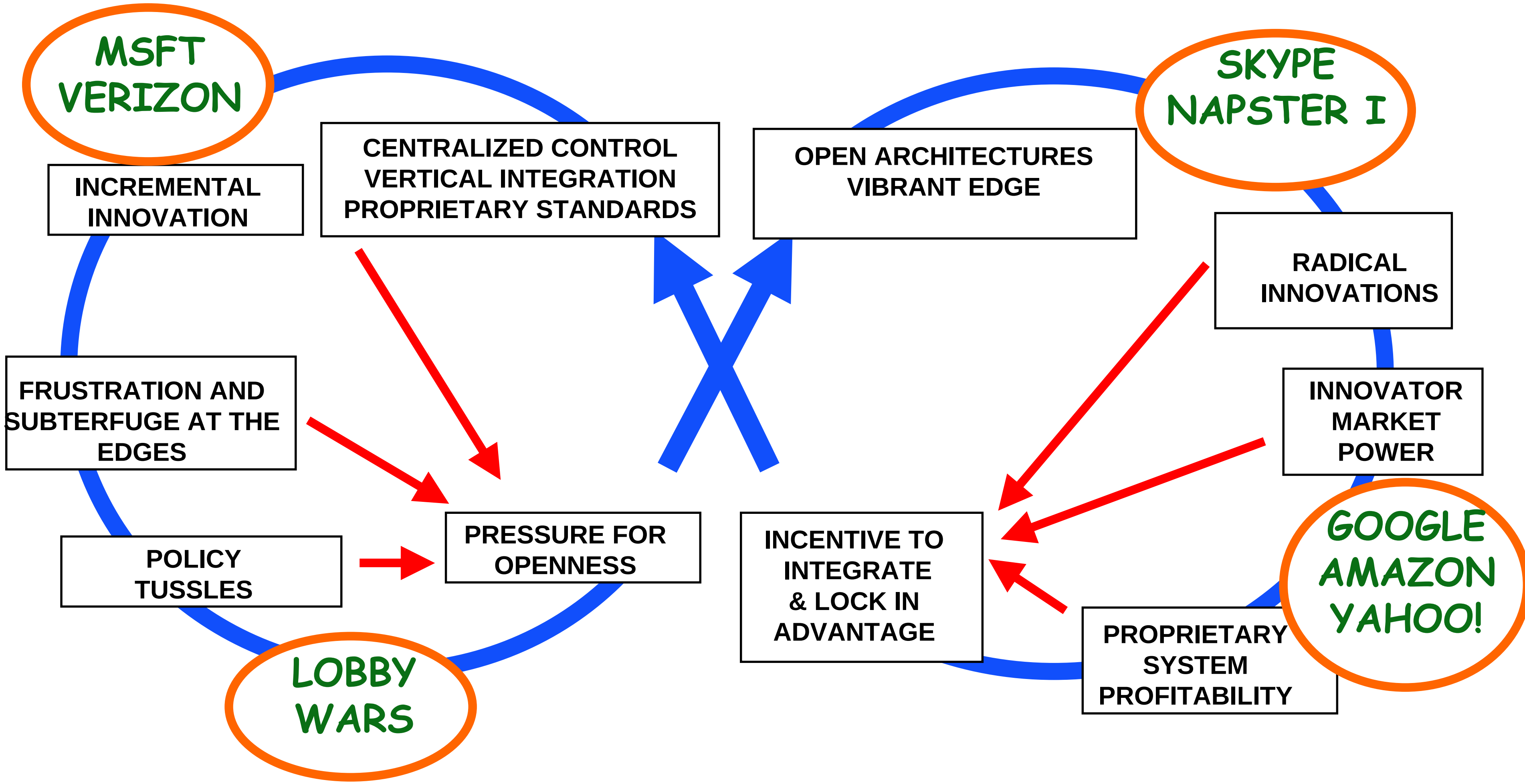
Privately controlled networks dominate

Freedom for Edge Innovation

OR, SHOULD YOU HEDGE YOUR BETS? HOW?

THE DYNAMICS OF CORE & EDGE

"THE (third) DOUBLE HELIX"



Adapted from *Clockspeed* by C. Fine, Chapter 4, Perseus Books, 1998.

CASE STUDIES IN
Core-Edge/Value Chain Dynamics

#1: Voice Communications

VOIP: Disruptive Wedge or Tool of the Giants?

#2: Music Marketing, Distribution, Storage, Consumption

Where's the leverage in the Value Chain?

#3: RFID tags and readers

Pushing out the edge by the billions

#4: Supply Chain Management

Outsourcing as trap or liberation

1. VOIP Business Models: Who controls the control points?

Communications Value Chain

NETWORK EQUIPMENT MANU-FACTURER	FACILITIES PROVIDER (NETWORK OPERATOR)	SERVICE PROVIDER	FEATURE (APPLIC/ PROVIDER	CPE (PHONES, MODEMS ETC.)

Scenario 1: Voice as Commodity

- Many Access Substitutes with low-cost PSTN interoperability
  - PSTN, Cable, DSL, GSM/CDMA, WiFi/WiMax,
- Many SIP servers & gateways and SIP enabled devices & applications
- No VoIP Blocking

Scenario 2: Skype Inside

- Free VOIP captures customers for suite of Applications
  - Gaming, Distance Learning, Internet Radio, Internet TV, Webcast
- Incumbent response too slow, too tepid

Scenario 3: The Empire Strikes back

- Domination (in U.S.) by the Big Four (Verizon, SBC, Comcast, Time Warner)
- One stop shops for all communications and media services
- Choke off municipal and start-up activity

Ref: Chintan Vaishnav , MIT ESD & CFP

2. Music – iTunes & the Music Value Chain

(Will Apple Records rise again?)

Music Creation	Music Publishing	Music Marketing	Music Distribution	Music Playing Device
Artists	iTunes Music Store?	iTunes Music Store	iTunes	iPod

Ref: Natalie Klym, MIT CSAIL & CFP

3. RFID tags push the boundaries of the Edge

(Research Assistant: Natalie Klym)

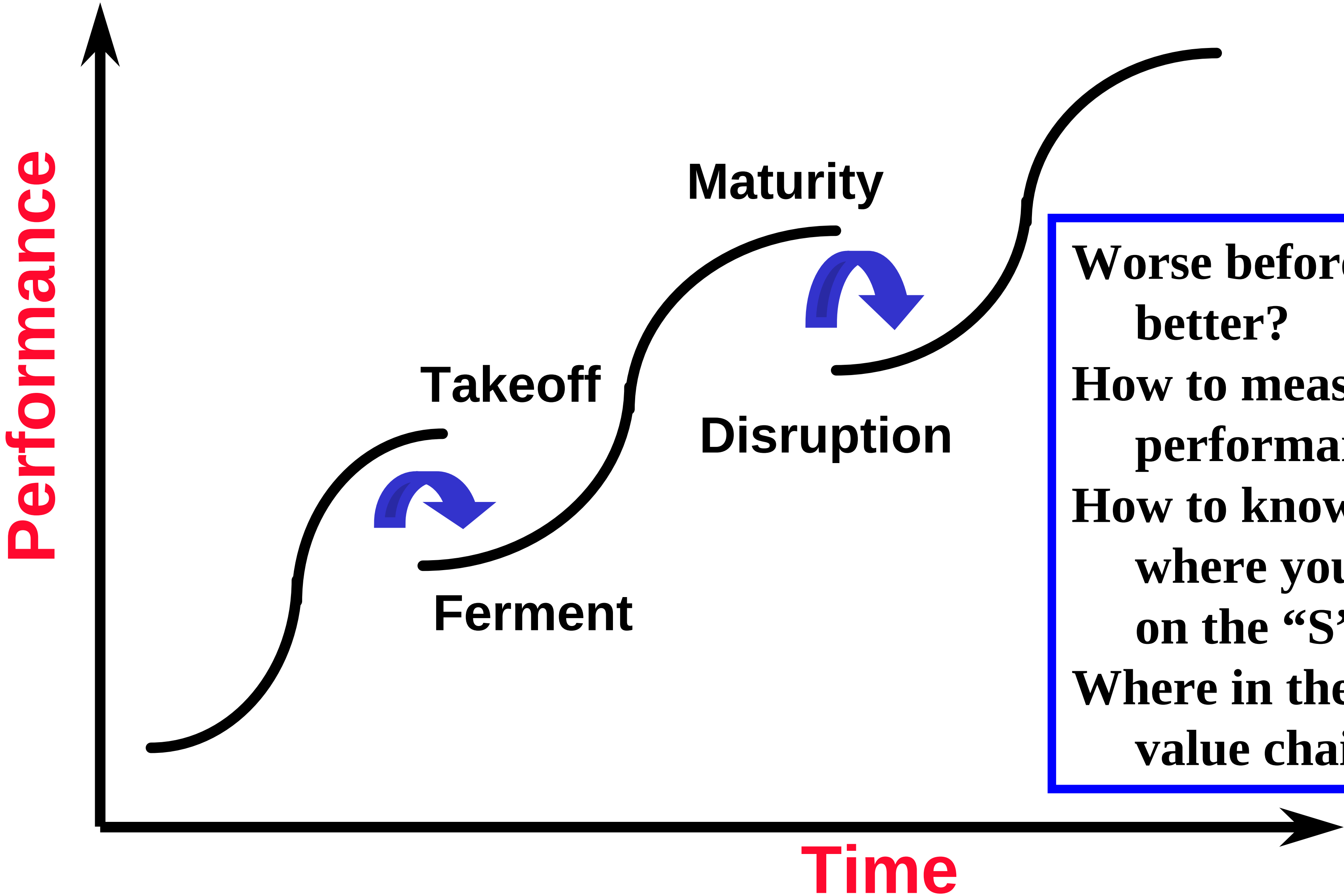
1. **DoD wartime have *primed the pump* for RFID technology and applications.**
2. **Walmart adds to this effect: box & pallet.**
3. **Pharmacies will do the same for item tagging.**

RFID tag	Mobile phone chip	Centrino
5¢	$20	$800
10B/yr	500M/yr	40M/yr

What *disruptions* will be driven by the explosion of the edge?

Innovation Dynamics can be

RADICAL *(disruptive)* or INCREMENTAL *(sustaining)*



Worse before better?

How to measure performance?

How to know where you are on the "S"?

Where in the value chain?

What makes an innovation disruptive?

Performance Push

an overwhelmingly superior technology/process

(jet airplane, penicillin, mass production)

Customer Pull

new customers care about different measures of performance

(wireless phones, personal computers)

Organizational Competencies

incumbents cannot do what the innovators can

(Dell supply chain, Southwest Air)

WILL RFID BE A DISRUPTIVE TECHNOLOGY?

4. Supply Chain Management

ICT enable greater supply chain control over distant suppliers,
but does that mean that outsourcing will dominate??

Foxconn: "The solution to supply chain management is Vertical Integration."

IBM-Daksh:
Create value in services through Vertical Integration.

IBM's Challenge in Service Supply Chains:

Turn a commodity asset into an integrated/differentiated product offering

ALL COMPETITIVE ADVANTAGE IS TEMPORARY

Autos:

Ford **in 1920,** ***GM*** **in 1955,** ***Toyota*** **in 1990**

Computing:

IBM **in 1970,** ***DEC*** **in 1980,** ***Wintel*** **in 1990**

World Dominion:

Greece **in 500 BC,** ***Rome*** **in 100AD,** ***G.B.*** **in 1800**

Sports:

Bruins **in 1971,** ***Celtics*** **in 1986,** ***Yankees*** **no end??**

The faster the clockspeed, the shorter the reign

All Conclusions are *Temporary*

Clockspeeds are increasing almost everywhere
Value Chains are changing rapidly