

Course Outline, 15.760A

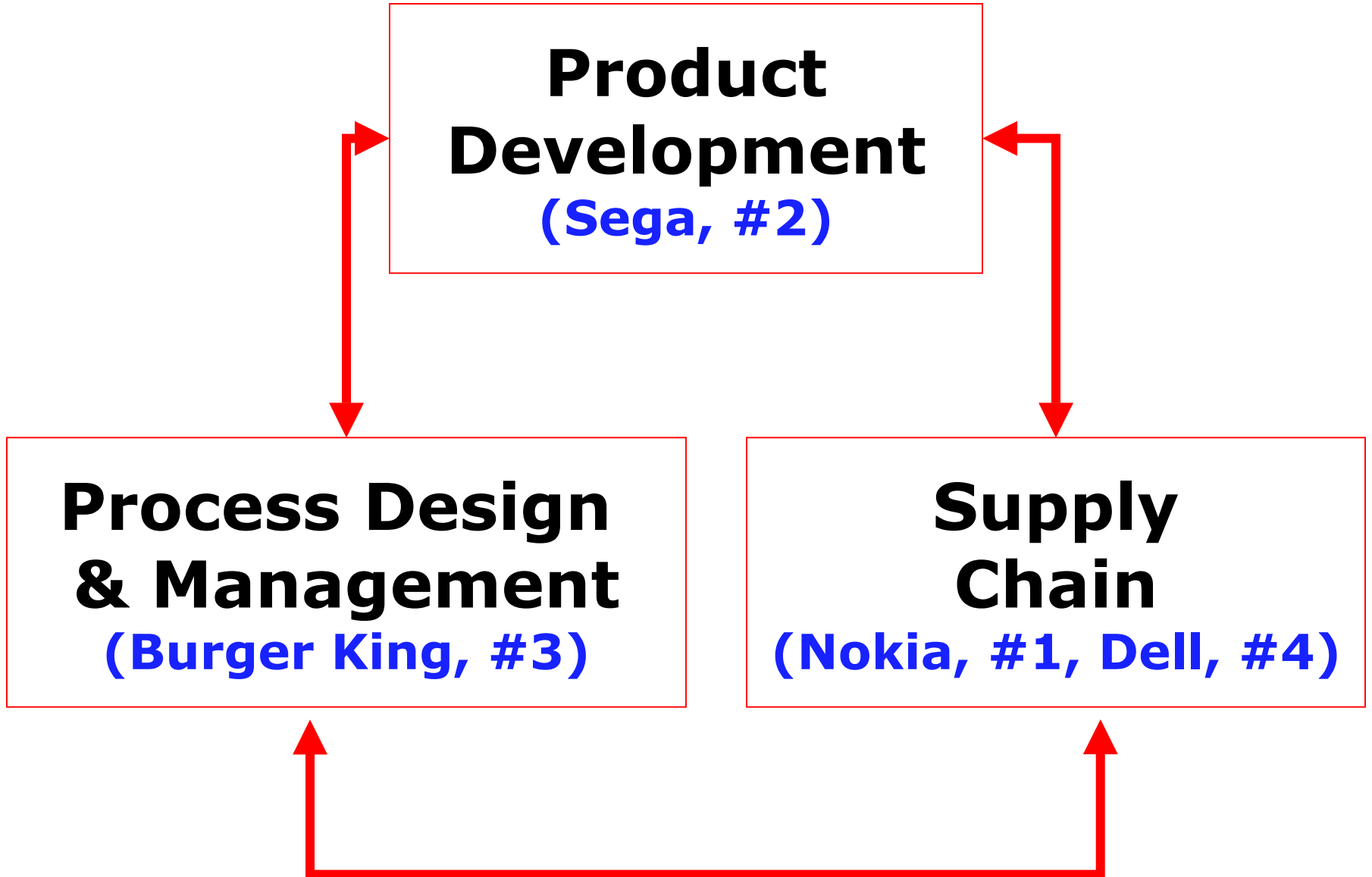
1	<i>Introduction</i>	Course Introduction	Trial by Fire, powerpoint on Ops Strat
2	<i>Product Dev</i>	Dreamcast/Sega	<i>Chap 8 in Clkspd on 3-DCE, ABC's of CPM</i>
3	<i>Operations</i>	Burger King	Types of Processes, EOQ, Newsvendor
4	<i>Strategy</i>	Inventory Mgmt	Inven probs, Relevant costs, Whirlwind/Web, Dell/Conqueror, Laptop King
5	<i>Process</i>	Alaska Airlines	Levitt
6	<i>Technology</i>	<i>Webvan</i>	They've got mail.
7		Cisco	MRP note, ERP Technology Note
8	<i>Process</i>	Process Flow Models	Queueing Note & Inventory Buildup
9	<i>Analysis</i>	National Cranberry	
10		<i>Univ Health Service</i>	
11	<i>Process</i>	Quality Mgmt	Deming, Juran, Crosby; 6sig, Berwick, Memory Jogger
12	<i>Quality</i>	Toyota	Lean Production, Karmarkar
13		<i>The Goal</i>	
14		Bank of America	Hammer & Cole Articles
15	<i>Supply</i>	Hewlett-Packard	SMR paper
16	<i>Chain</i>	<i>Barilla SPA</i>	
17		Sport Obermeyer	
18	<i>Wrap-Up</i>	Wrap-up	

Three Foundational Components of Operations Management

Product Development
(Sega, #2)

Process Design & Management
(Burger King, #3)

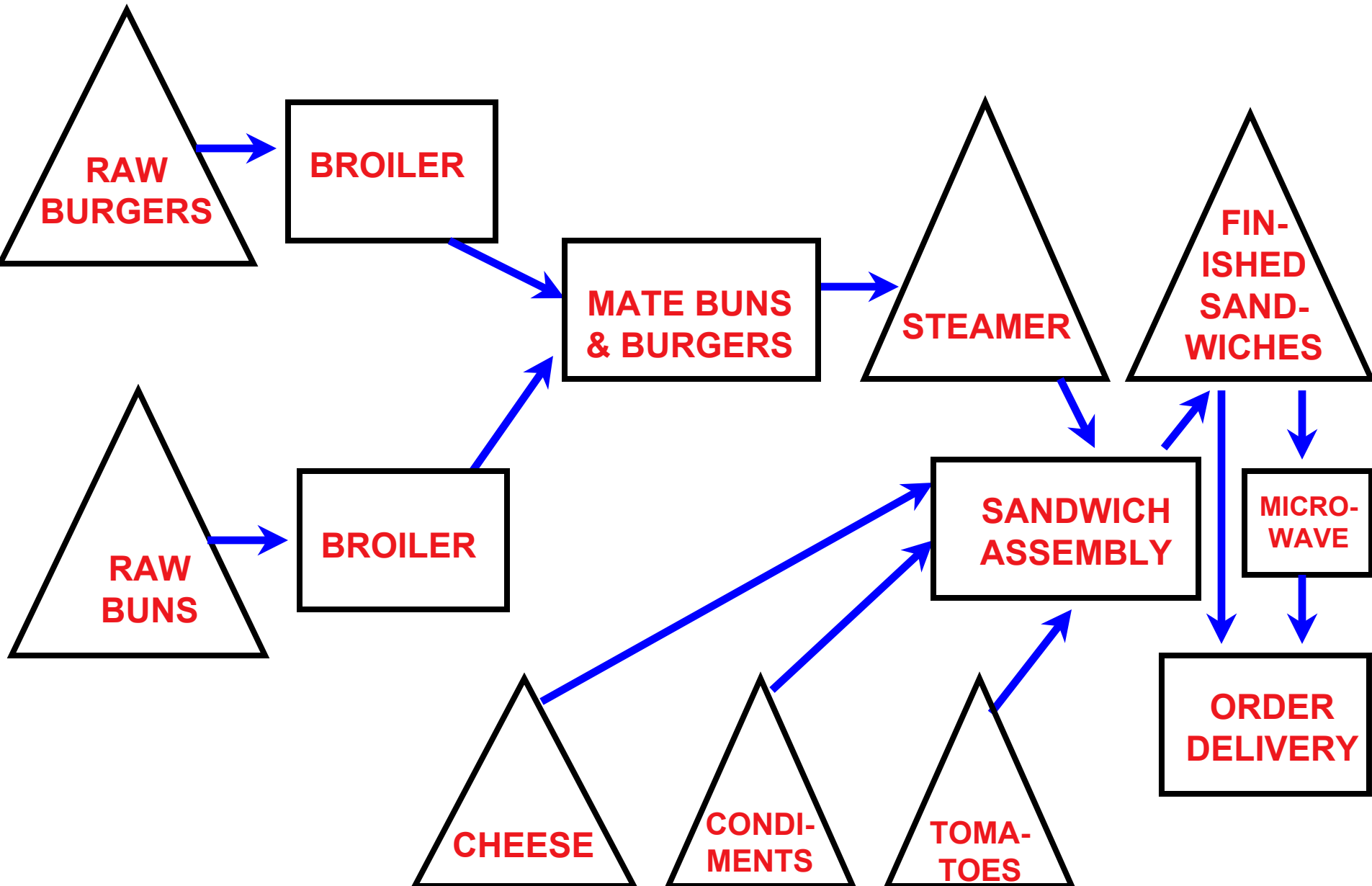
Supply Chain
(Nokia, #1, Dell, #4)



15.760: Burger King

- 1. What are the operations objectives for Burger King?**
- 2. Process flow diagram for hamburger sandwich production.**
- 3. Where are the inventories? Why?**
- 4. Peak hourly capacity vs. peak hourly demand for burger patties.**
- 5. How does the management of operations relate to the company's method of competing in the marketplace?**
- 6. What are the fastest clockspeed components of the Burger King value chain?**
- 7. How well integrated are BK's product, process, and market?**

BK: Process Flow Diagram for Sandwiches



BK: Peak Load Demand vs. Capacity

$$34227 \frac{\text{Sandwiches}}{\text{month}} \div 4.3 \frac{\text{weeks}}{\text{month}} \times 18\% \text{ (Fridays)} \times 17.9\% \text{ (noon hour)} =$$

256 sandwiches , of which 48 are hamburgers
peak hour 51 are cheeseburgers
24 are double cheeseburgers
=> peak demand = 147 burger patties/hour

Each broiler chain cooks 8 patties => 480 patties
minute hour

(Assume other chain used for Whoppers)

Case fact: max assembly rate = 200 burgers/hour
100 specialty sandwiches/hr

Broiler utilization = $147/200 = 74\%$

Bottleneck is assembly

Restaurant Operations Management

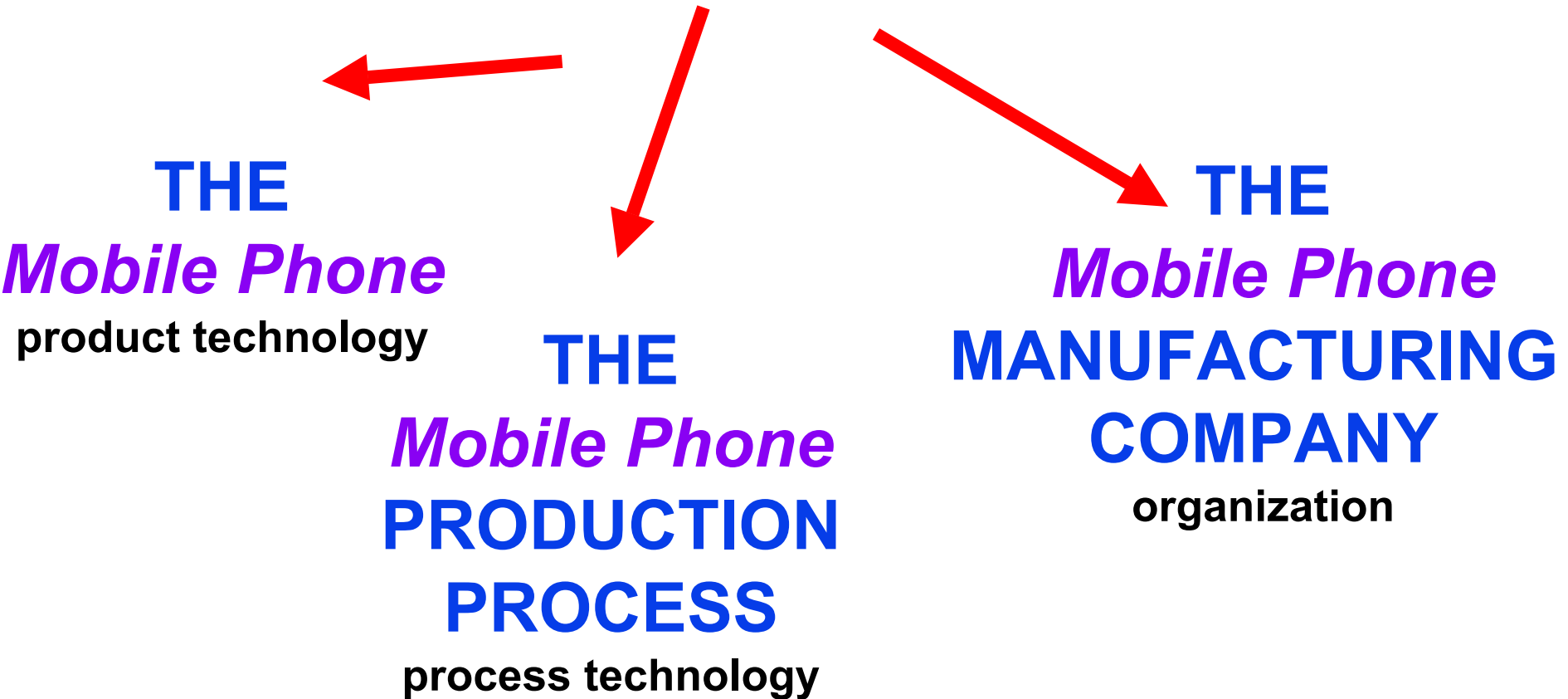
1. **What are the key DESIGN parameters for Burger King?**
 - A. Product
 - B. Process Technology
 - C. Facility
 - D. Work System/HR System
2. **What are the key PLANNING tasks for Burger King?**
 - A. Supply
 - B. Demand
 - C. Capacity/Workload
3. **What are the key CONTROL processes for Burger King?**
 - A. Production Control
 - B. Quality Control
 - C. Process Control
4. **What are the key IMPROVEMENT processes for BK?**
 - A. Quality Improvement
 - B. Productivity Improvement
 - C. Technological Improvement
 - D. Systems Improvement

Some Characteristics of Services (vs. Manufacturing)

- **Intangibility** - explicit and implicit intangibles
 - “We manufacture perfume; we sell hope.”
- **Perishability** - an hour of non-production is an hour lost
 - Airplane w/o spare part costs > \$10K/hr
- **Heterogeneity** - inherent variability of service
 - Each doctor’s bedside care is unique
- **Simultaneity** - services are simultaneously produced and consumed
 - A poor attitude by the server cannot be recalled

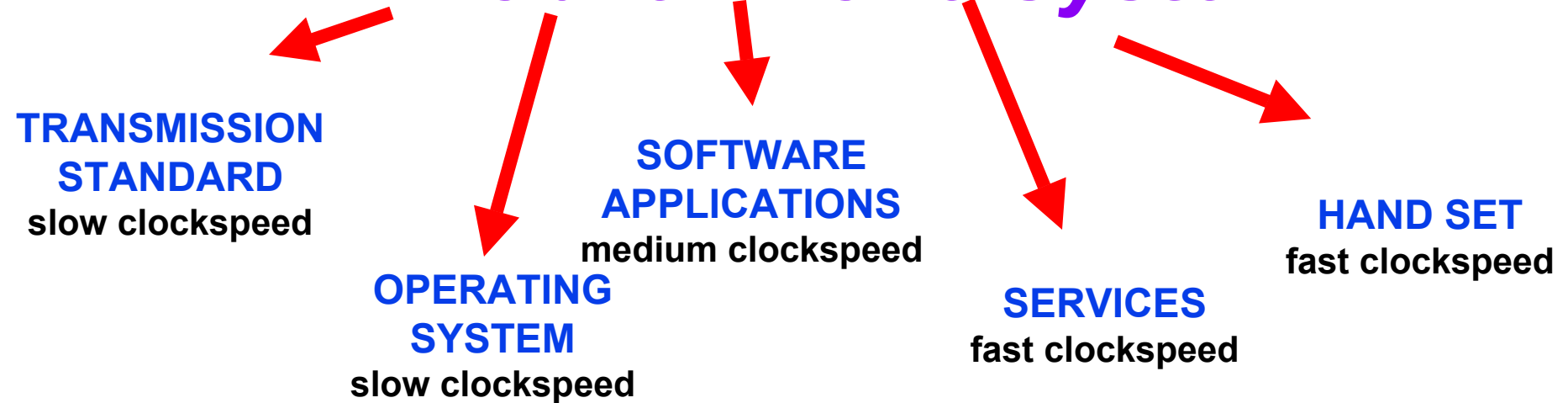
**INDUSTRY CLOCKSPEED IS A COMPOSITE:
OF PRODUCT, PROCESS, AND ORGANIZATIONAL
CLOCKSPEEDS**

Mobile Phone **INDUSTRY CLOCKSPEED**



Mobile Phone System **CLOCKSPEED** is a mix of
Transmission Standards, Software and Handsets

Mobile Phone System



ISSUE: THE FIRMS THAT ARE FORCED
TO RUN AT THE FASTEST CLOCKSPEED
ARE THE MOST LIKELY TO STAY AHEAD
OF THE GAME.

Product

Process

Supply Chain

Design
Detailed
Perform.
Specs
& Funct.

Architect.
Modular
vs.
Integral

Unit
Processes
Tech.
& Equip.

Mfg.Syst
Functnl
Cellular.

S.C.
Architect
Orgs Set
& Alloc.
of Tasks

Logistics
& Coord
System
Auton vs.
Integrated



- **Focus**
- **Architecture**
- **Technology**

A 3-D CE decision model
illustrating the *imperative*
of concurrency