TURKISH AVIATION ACADEMY

İTÜ

Introduction

Professor David Gillen (University of British Columbia) &
Professor Benny Mantin (University of Waterloo)

Istanbul Technical University

Air Transportation Management

M.Sc. Program

Logistic Management in Air Transport

Module 1

14 December 2015

ADMINISTRATIVE MATTERS

- About the Instructors:
- David Gillen (UBC, Sauder School of Business)
  - YVR Professor of Transportation Policy & Management
  - Director: Center for Transportation Studies
  - Email: david.gillen@sauder.ubc.ca
  - Access: through email and course web portal, before or after class
- Benny Mantin (U of Waterloo)
  - Professor of Management Science
  - Email: bmantin@uwaterloo.ca
  - Access: through email and course web portal, before or after class

COURSE MATERIALS

- Required Materials-(Posted on the course website)
  - Syllabus (Posted on the course website)
  - Class slides, notes and other required readings
  - Course pack (cases)

- Recommended Materials
  - Matching Supply with Demand: An Introduction to Operations Management by Gerard Cachon & Christian Terwiesch, McGraw Hill – Irwin (2013, 3rd edition) – referred to as C&T in suggested readings

COURSE REQUIREMENT AND GRADING

Case Study	35%	
Presentation	10%	
Final Exam	40%	
Participation	15%	Criteria
Working in teams		4-5 people per team
***Ad hoc* Homework**		Important for applying concepts

LEARNING OBJECTIVES-what are we trying to accomplish

- What is logistics?
  - Historically about cost economics
  - Contemporarily about demand generation
- What is operations?
  - Some clarification about terminology
  - Processes, supply chain management?
- Introduction to the "process perspective"
  - Operations focus on intra-firm processes
  - Logistics traditionally focuses on inter-firm processes

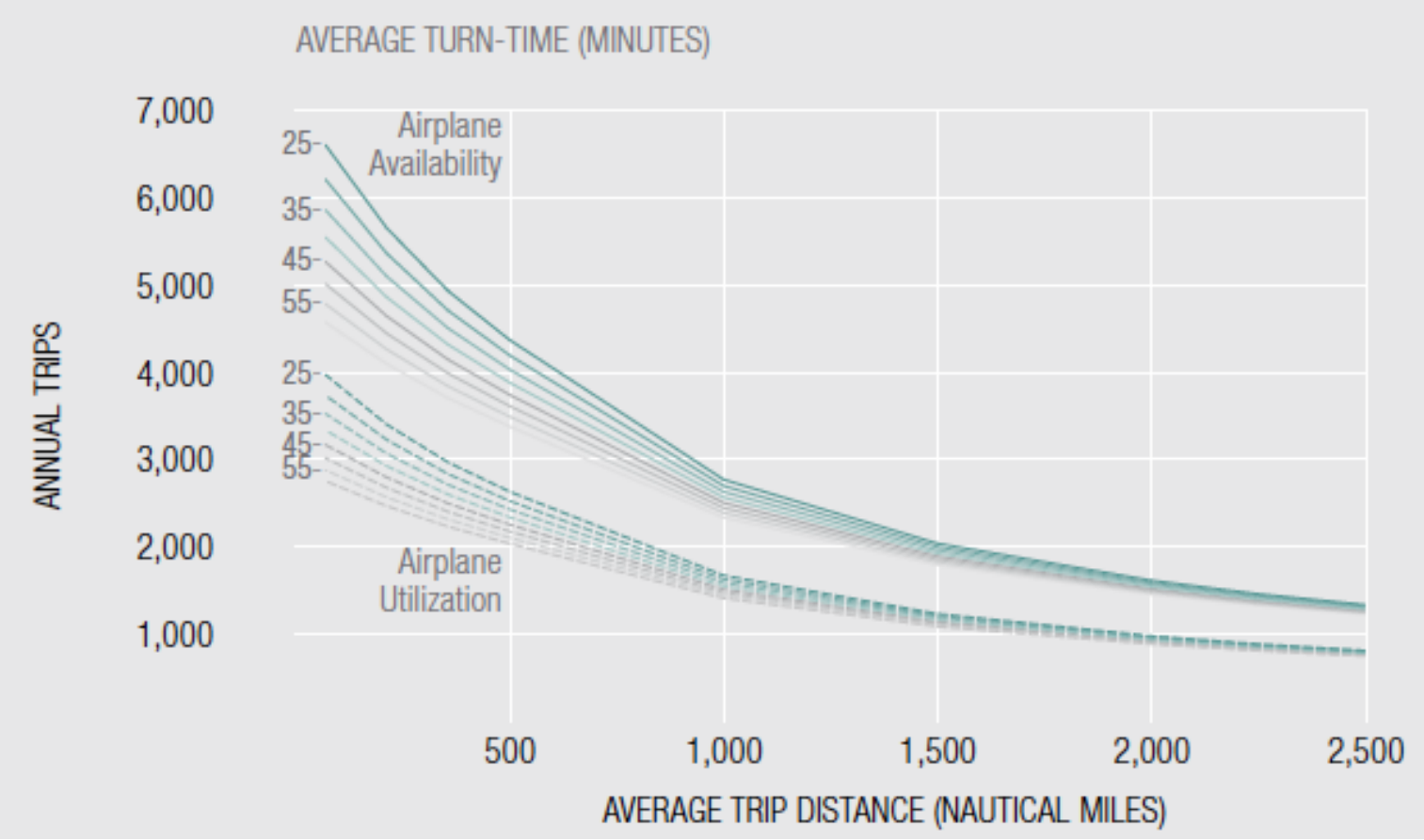
Emerge from this course with a Solid Skills Set

AIRLINE INDUSTRY 2014

2014	Ryanair	SAS	Alitalia	British Airways	Lufthansa Group
Net income (mln)	522.80 €	-78.38 €	-578.28 €	702.00 €	55.00 €
# employees (thousands)	9.501	12.329	10.088	43.12	118.973
Revenue/Employee	530.12 €	336.06 €	315.28 €	271.78 €	252.25 €
Income/employee	55.03 €	-6.36 €	-57.32 €	16.28 €	0.46 €
Passenger/employee (000s)	8.60	2.39	2.22	0.96	0.89
RPK/employee	10918	2816	3526	3210	1804
Aircraft utilization (hrs per day)	11.76	9	9.22	10.44	9.46
RPK (mln)	103733	34714		138431	214683.648
Revenue (mln)	5,037 €	4,143 €	3,181 €	11,719 €	30,011 €
Passengers (mln)	81.7	29.4	22.4	41.5	106.0
Aircrafts	323	150	125	278	615

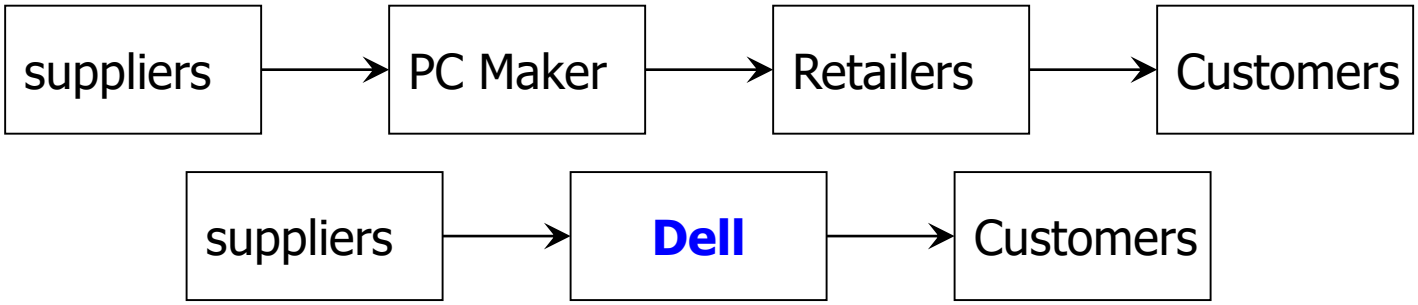
Source: various annual reports

What Explains some Differences in Performance?



Airplane availability (in terms of number of trips) is quite sensitive to average turn-time for shorter average trip lengths.

DELL COMPUTER



How it operates

- Bypassing dealers and selling directly to customers
- Assemble-to-order
- Information sharing with component suppliers in real-time
- Customer finances supplies before receiving product

What it benefits

- Eliminating dealers' markup; closer customer relationship
- Reduced finished goods (PC) inventory
- Reduced raw material (components) inventory
- For suppliers: better production scheduling, less inventory
- For customers: **Low price**

Dell's Messages

- ***Competitive strategy*** is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of values.
- Different from other computer manufacturers who create technological values, *Dell creates values in balancing supply and demand*.
- Dell 'pulls' the product for delivery with customization, IBM & HP 'push' the product with standardization.

SOUTHWEST AIRLINES

Link to video

Southwest targets customers who want convenience at low cost

How it operates

- Point-to-point flights between midsize cities and secondary airports in large cities
- No meal, no interline baggage transfer, no business class
- Frequent departure, automated ticketing
- All 737 aircrafts

What it benefits

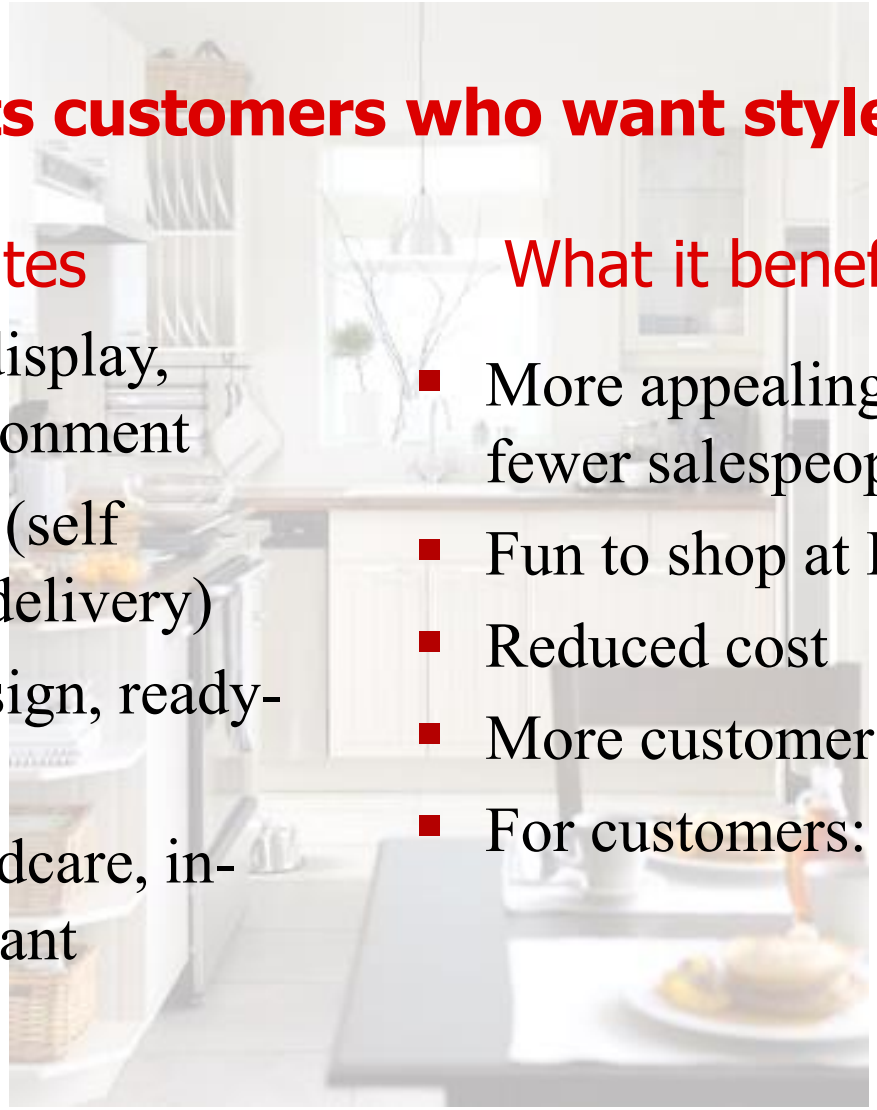
- Avoiding congestion; faster turnaround at the gate (15 min); few aircrafts needed
- Reduced cost; faster turnaround at the gate
  Attracting convenience-sensitive customers
- Reduced maintenance cost
- For customers: **Low price**

Southwest's Messages

- ***Competitive strategy*** is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of values.
- Rethink revenue management.
  Southwest airline creates values (low price and frequent departures) for price- and convenience-sensitive customers by sacrificing certain services.
- Reduce operational costs by being efficient and flexible
  - Even boarding the airplane is a simplified process!
- Reduce complexity consistently: organization, fleet, network, fares

IKEA

Link to video



IKEA targets customers who want style at low cost

How it operates

- Room-like display, family environment
- Self-service (self pickup and delivery)
- Modular design, ready-to-assemble
- In-store childcare, in-store restaurant

What it benefits

- More appealing to customers, fewer salespeople needed
- Fun to shop at IKEA
- Reduced cost
- More customer satisfaction
- For customers: **Low price**

IKEA's Messages

Competitive strategy

- is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of values.

Operational strategy

- Different from other furniture stores where budget-constrained shoppers are reluctant to step in, IKEA creates values for these customers. All of the IKEA designs and services are aligned with the needs of its customers.
- Be smart about selling inexpensive low quality furniture
- Increase revenue and decrease costs at the same time.
- Make customers act like 'employees'

Fresh example: Your Mechanic

- Winner of TechCrunch Disrupt 2012
- Aim: streamline the process of getting your car repaired or serviced without having to leave home
- 80% of car issues do not require the expensive amenities found in shops

- What other services might this work with? Hair cuts/styling, manicures, pedicures, wardrobe choice?

Sources: http://techcrunch.com/2012/09/12/techcrunch-disrupt-sf-2012-winner/, https://www.yourmechanic.com/

The Traditional View of OM

- OM used to be the science of manufacturing, production, and *logistics*.
- Traditionally, typical operational issues were:
  - Given demand forecasts and product lines, how should the production be planned, sequenced and scheduled?
  - How should inventories of the raw materials and work in process goods be managed (warehoused, transported, etc.)?
- These traditional issues are still crucial to the success of today's business.

WHERE DOES LOGISTICS FIT?

- *Traditional view*: 'is the process of planning, controlling and implementing the efficient, cost effective flow and storage of raw materials, in-process inventory finished goods and related information, from the point of production to the point of consumption AND meeting customer needs and requirements. (supply side)
- *Modern*: it is the integration of all of these processes to achieve better relationships to ensure a sustained competitive advantage (demand side)

THE CURRENT VIEW OF OM

- Today OM refers more generally to the study of business processes.
- OM concerns both manufacturing industries and service industries.
- Today, typical issues are:
  - How can we manage tradeoffs?
  - How can we balance supply and demand?
  - How can we provide the best value to the customers?
- OM has changed from being purely tactical to more strategic.

What is Operations?

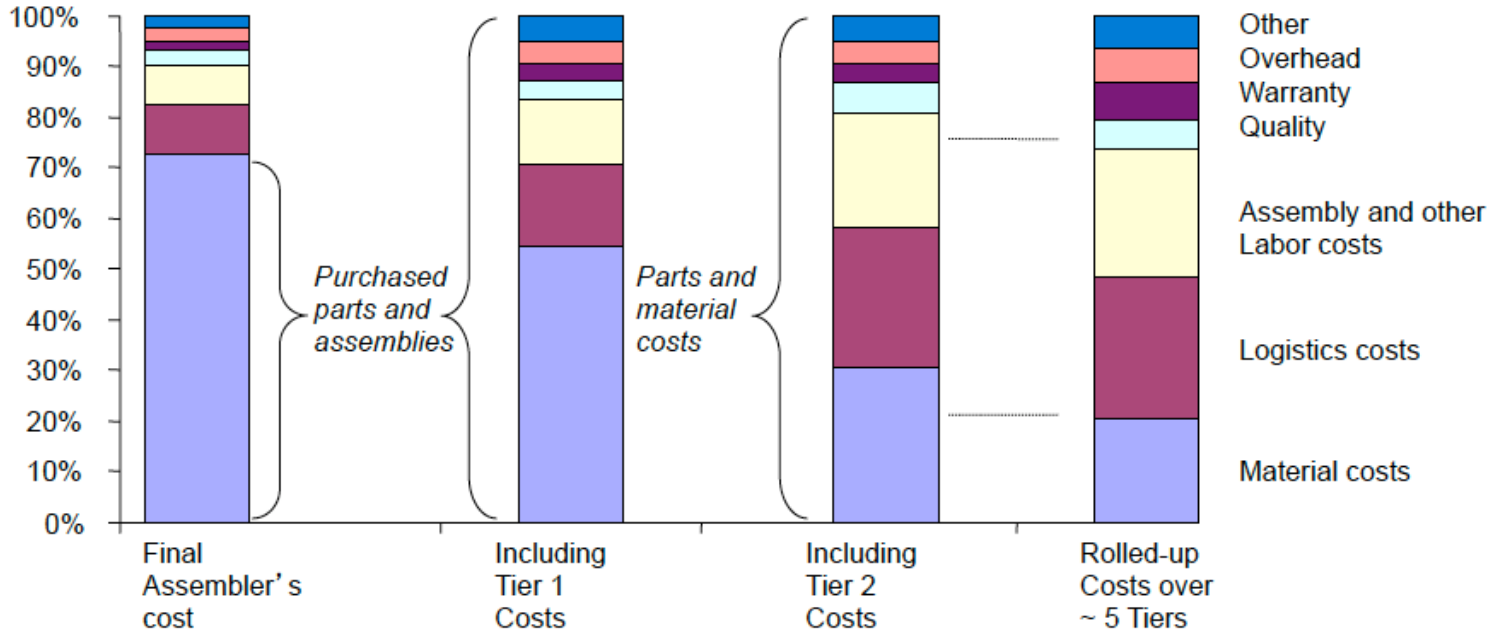
- Delivering value by the proper *execution* of strategic goals
  - "When companies fail to deliver on their promise, the most frequent explanation is that the … strategy was wrong. But the strategy is … not often the cause. Strategies fail most often because they are not executed well." *Execution: The Discipline of Getting Things Done* by Larry Bossidy and Ram Charan

- Three Key Points of Execution
  - **Execution** is a discipline, and integral to strategy
  - **Execution** is the major job of the business leader
  - **Execution** must be a core element of an organization's culture

The Economic Consequences of the Supply-Demand Mismatch are Severe

	Air travel	Emergency room	Retailing	Iron ore plant	Pacemakers
Supply	Seats on specific flight	Medical service	Consumer electronics	Iron ore	Medical equipment
Demand	Travel for specific time and destination	Urgent need for medical service	Consumers buying a new video system	Steel mills	Heart surgeon requires pacemaker at exact time and location
Supply exceeds demand	Empty seat	Doctors, nurses, and infrastructure are under-utilized	High inventory costs; few inventory turns	Prices fall	Pacemaker sits in inventory
Demand exceeds supply	Overbooking; customer has to take different flight (profit loss)	Crowding and delays in the ER, potential diversion of ambulances	Foregone profit opportunity; consumer dissatisfaction	Prices rise	Foregone profit (typically not associated with medical risk)
Actions to match supply and demand	Dynamic pricing; booking policies	Staffing to predicted demand; priorities	Forecasting; quick response	If prices fall too low, production facility is shut down	Distribution system holding pacemakers at various locations
Managerial importance	About 30% of all seats fly empty; a 1-2% increase in seat utilization makes difference between profits and losses	Delays in treatment or transfer have been linked to death;	Per unit inventory costs for consumer electronics retailing commonly exceed net profits.	Prices are so competitive that the primary emphasis is on reducing the cost of supply	Most products (valued $20k) spend 4-5 months waiting in a trunk of a sales person before being used

Cost Structure of an Automotive Company



- Vast majority of costs are driven by purchasing (design determines purchasing costs)
- Understand cost structures
- Economic tools of negotiations / auctions
- Streamline supply base
- Help suppliers develop their processes: by working with suppliers and sub-suppliers, costs can be improved (link to lean)

Source: Whitney / DaimlerChrysler

EXHIBIT 4

Eliminating delays

	Turnaround time between flights[1]	
	Average number of minutes per step	Best practice: minimum number of minutes per step[2]
Unload passengers[3]	6:14	4:38
Wait for cleaning crew to board aircraft	0:24	0:18
Clean airplane	11:48	9:40
Wait for transmission to gate of cabin crew's approval to board	4:11	0
Wait for first passenger to board	4:06	0
Load passengers	19:32	16:00
Wait for passenger information list	1:58	0:13
Close aircraft door	0:57	0:09
Detach boarding ramp	1:39	0:43
Total time (including initial steps[3])	**52:18**	**33:11**

Lean techniques

1. Stricter controls on carry-on bags, fewer passengers moving back in aisle to find bag
2. Cleaning crew in position ahead of time
3. Standardized work flow, timing, and methods, such as cleaning supplies in prearranged kits
4. Visual signal from cabin crew to agent when plane is ready to board—for example, light flashing at top of ramp
5. Active management of overhead storage bins by flight attendants
6. Passenger information list delivered by agent following last passenger to board
7. Agent ready at aircraft to close door

[1]For Airbus A320 single-aisle medium-range airliner (disguised example).
[2]Assumes rudimentary application of lean techniques; further reductions may be possible.
[3]Initial steps (attaching boarding ramp, opening aircraft door, and waiting for first passenger to deplane) can't be significantly reduced.

EXECUTION: TRANSFORM INPUTS INTO OUTPUTS

Inputs

- Capital
- Materials
- Equipment
- Facilities
- Labor
- Knowledge
- Time

Transformation

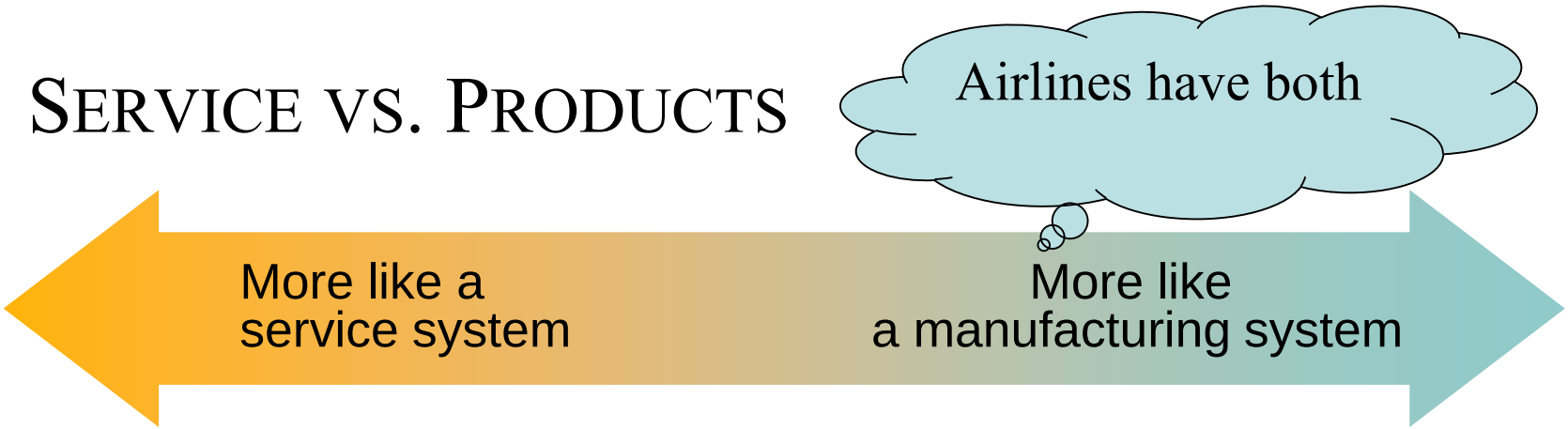
- Buy
- Make/ Create
- Sell
- Move

Outputs

- Products
- Services

Operations Management is the management (design, operation, and improvement) of the transformation processes that create value.

SERVICE VS. PRODUCTS



- Intangible, perishable output
- Output cannot be inventoried
- High customer contact
- Short response time
- Small facilities
- Labour intensive
- Quality not easily measured
- Local markets

- Physical, durable output
- Output can be inventoried
- Low customer contact
- Long response time
- Large facilities
- Capital intensive
- Quality easily measured
- Regional, national, or international markets

PROCESSES: EXAMPLES

- *You order a ticket online*. What are the different steps that THY takes in fulfilling your request?
- *You walk into the airport*, you check in and line up for security. What steps had to be completed to enable your entrance to the boarding area?
- *You go into a business lounge for a (fine) meal*. What steps did the restaurant have to go through to create a satisfactory experience for you?
- *You have to operate a flight* from IST to Izmir, what steps would you have to do to make this happen? Suppose it was a flight from IST to FRA, what are the differences in steps if any?

Transformation Processes: Examples

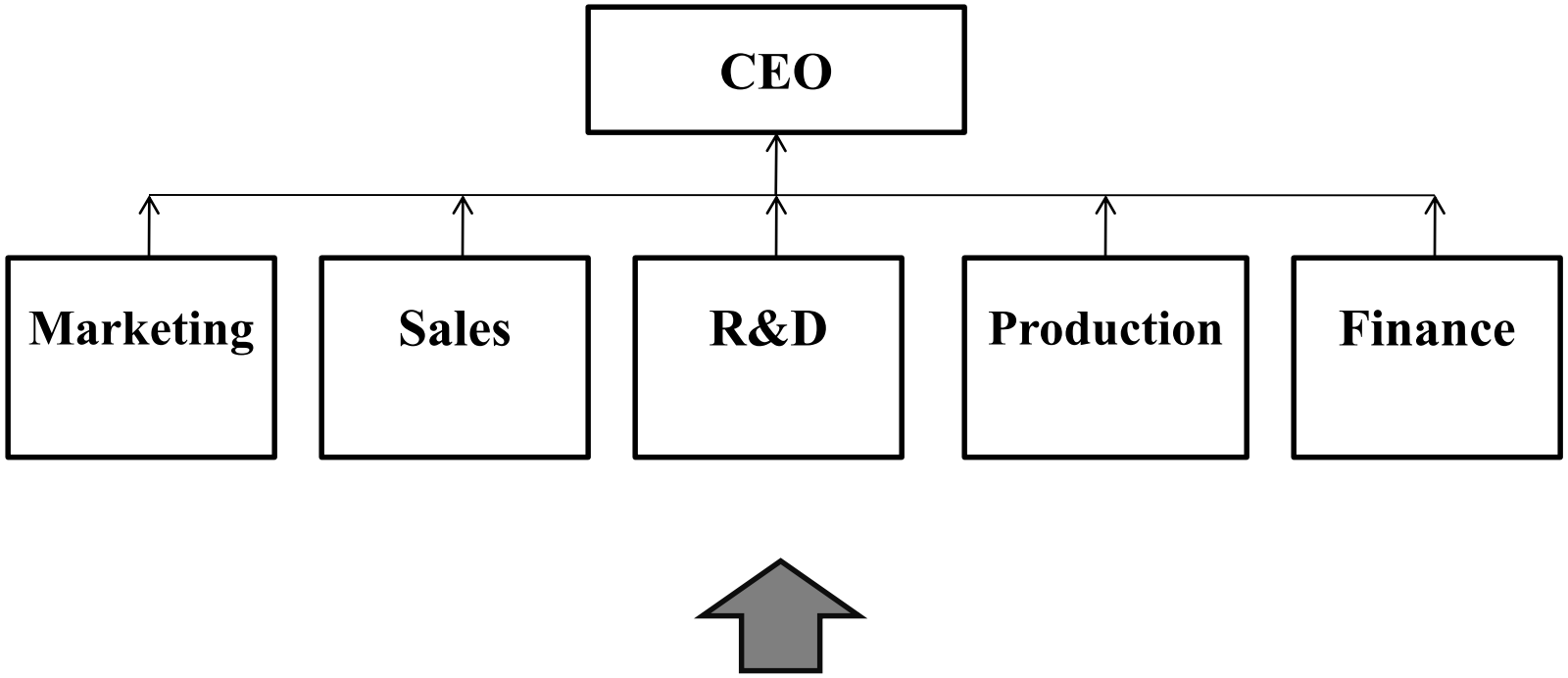
Production System	Primary Inputs	Transformation	Primary Outputs
Airframe Manufacture	Purchased parts raw materials, tools, equipment, workers	Fabrication and assembly	Aircrafts
Restaurant At the lounge	Hungry customers, raw materials, workers, equipment	Transform raw materials into food and serve the customers	Satisfied customers
University (MSc in Air Transport)	Students, teachers, staff, books, supplies, buildings	Transmit information, develop knowledge and skills	Educated individuals

EVERY ORGANIZATION HAS SEVERAL PROCESSES

At an aircraft manufacturer …

- Assembly Process: Transforms wings, fuselage, engines, stabilizers, wires, cockpit, paint… and assemblers' time into complete aircrafts
- Order Fulfillment: Transforms customer orders into delivered orders
- Accounting Process: Transforms data into financial statements
- Strategic Planning Process: Transforms inputs including information (about competitors and the external environment) and planners' time into a strategic plan

Processes are often “invisible”



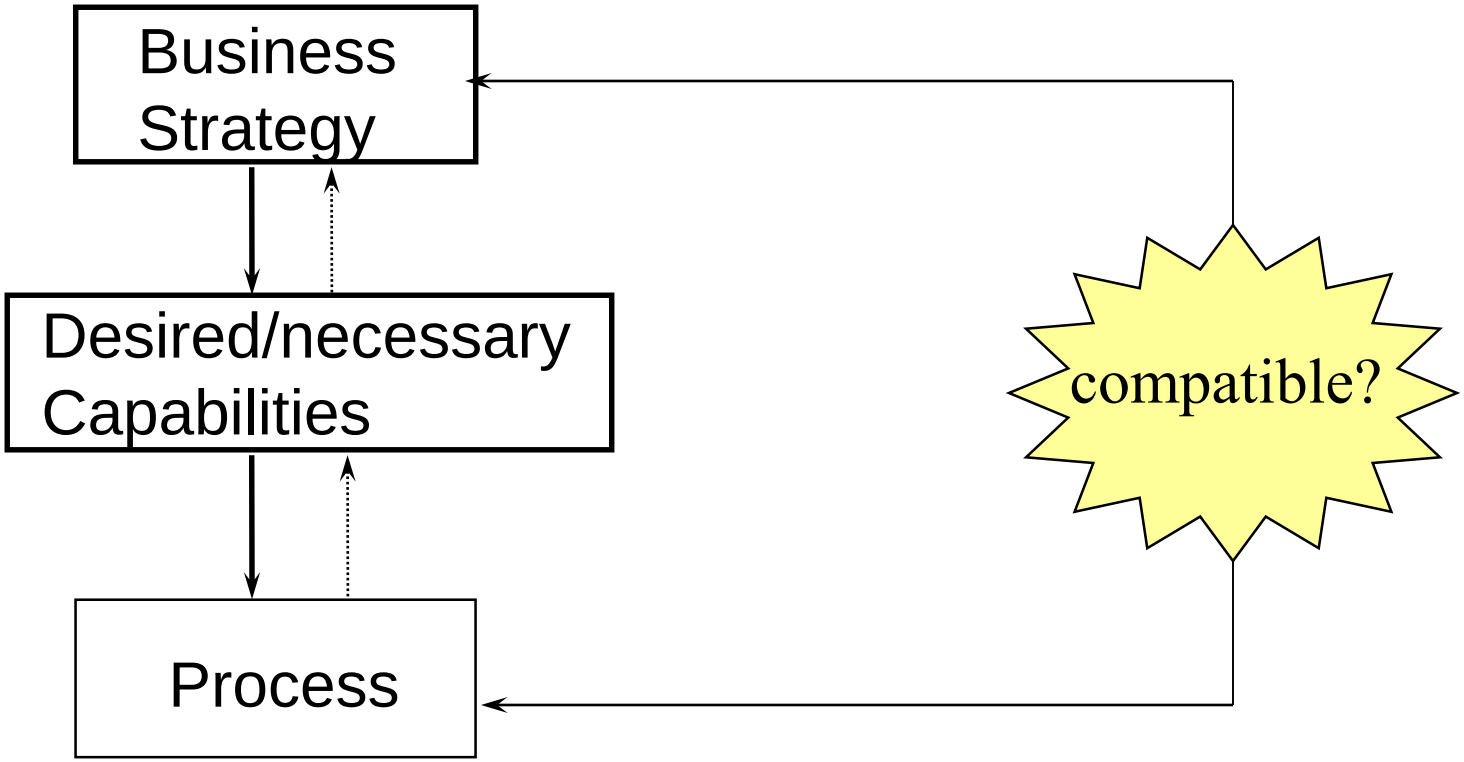
WHICH PROCESSES ARE WE INTERESTED IN?

Operations Management

BUY	Procurement, Financing, Hiring
MAKE/CREATE	Design, Manufacturing, Production, Service
SELL	Distribution, Marketing, Revenue Management
MOVE	**Logistics, Transportation**, Warehousing
All of the above	**Supply Chain Management**

What is a Good Process?

The Strategic View (The Effectiveness View)



The Elements of Strategy

Time Horizon
- Short Term
- Intermediate
- Long Term

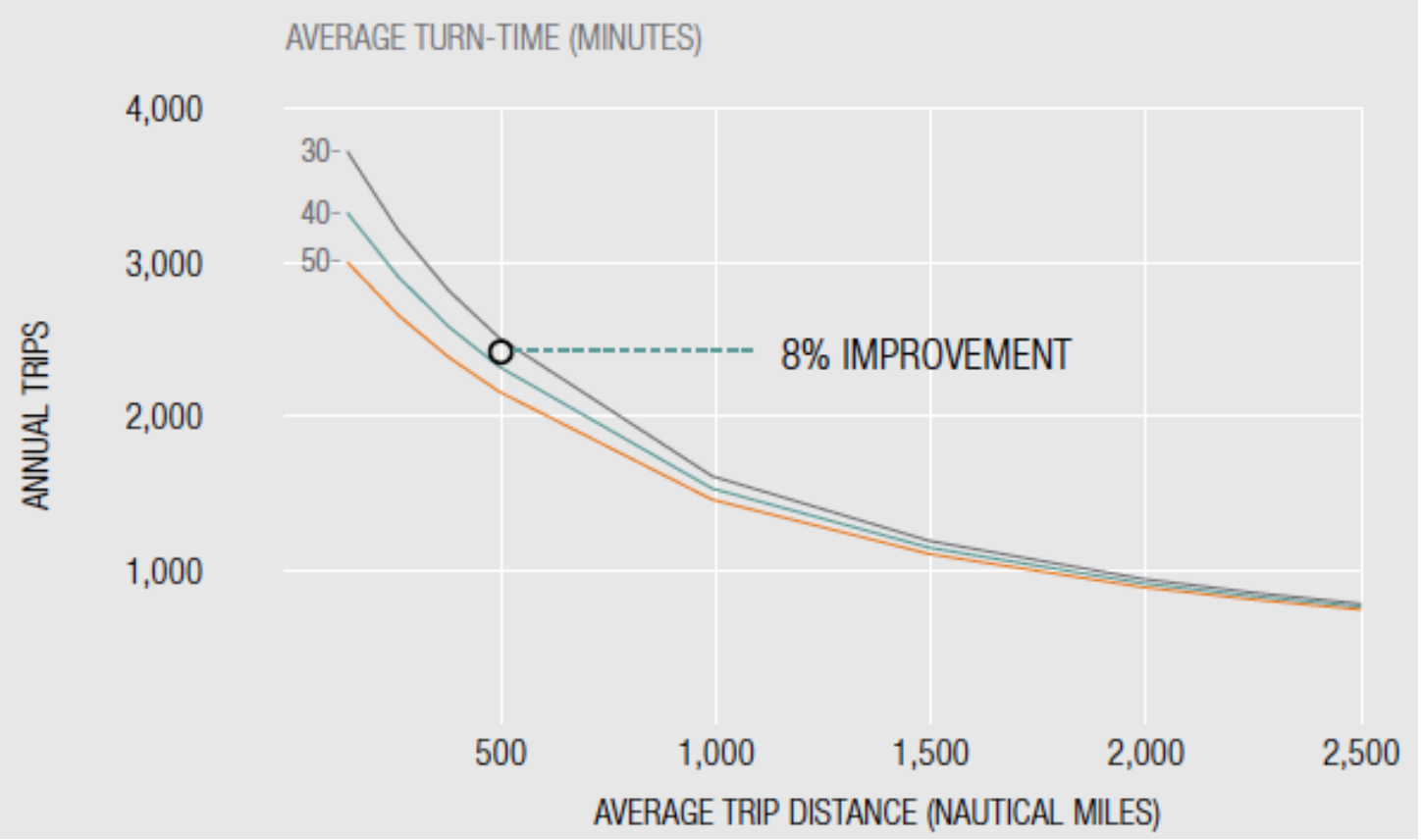
Evaluation
- Cost
- Quality
- Profitability
- Customer satisfaction

Focus
- Process Technology
- Market Issues
- Volume
- Quality
- Manufacturing Tasks

Consistency
- Professionalism
- Proliferation
- Changes in mfg. task
- Explicit goals

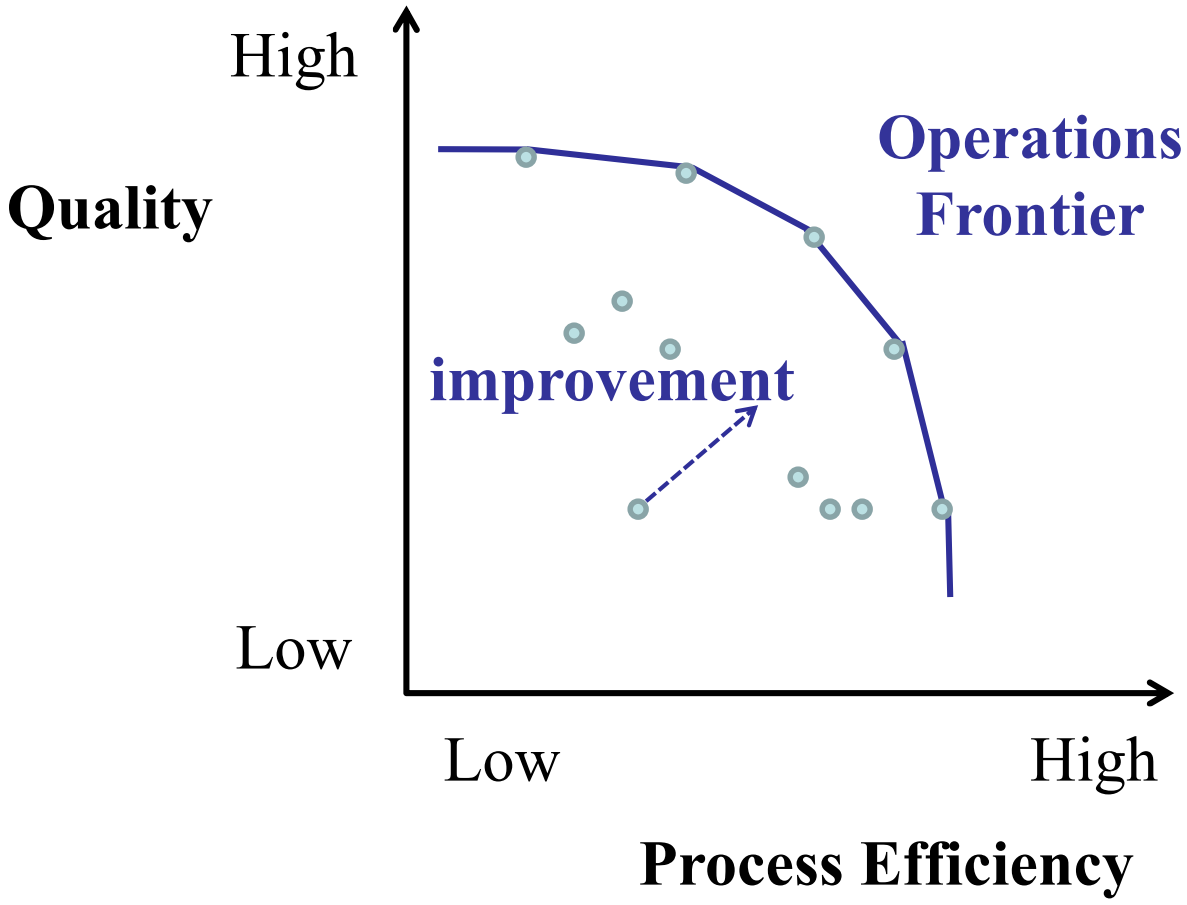
Competitive Dimensions	Operational Capabilities	Examples
• Price	• Low cost processes	Ryanair
• Product quality and reliability	• High quality process • Consistent quality	Rolex McDonalds
• Time	• Delivery speed • On-time delivery • Development speed	UPS Hawaiian's (93.34%) IBM
• Flexibility	• Customization • Variety • Volume flexibility	Mini Cooper Boeing Electricity

EFF ECTS OF TURN-TIME REDUCTIONS ON AIRPLANE UTILIZATION

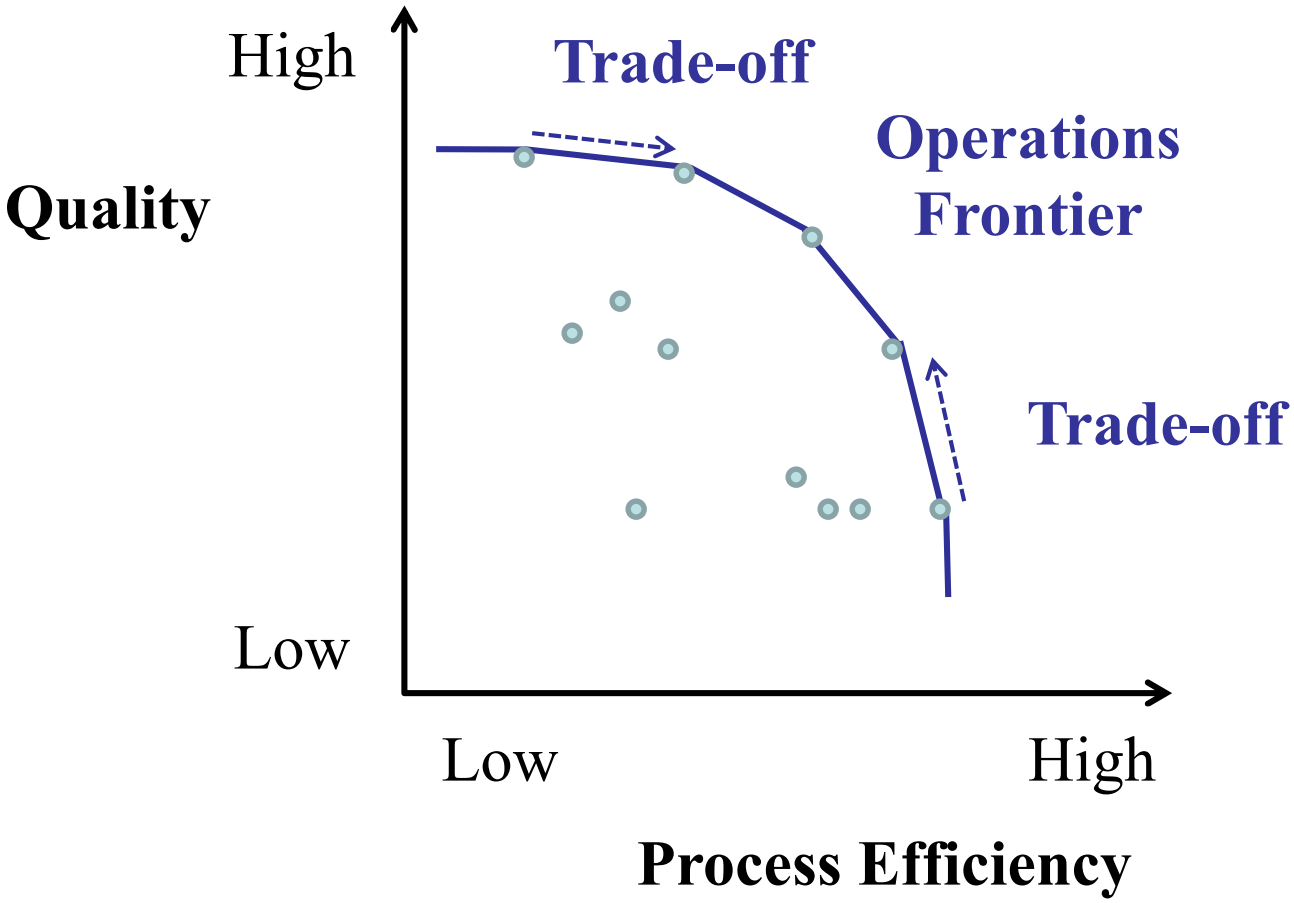


Reducing turn-time by 10 minutes with an average trip length of 500 nautical miles improves airplane utilization by 8 percent.

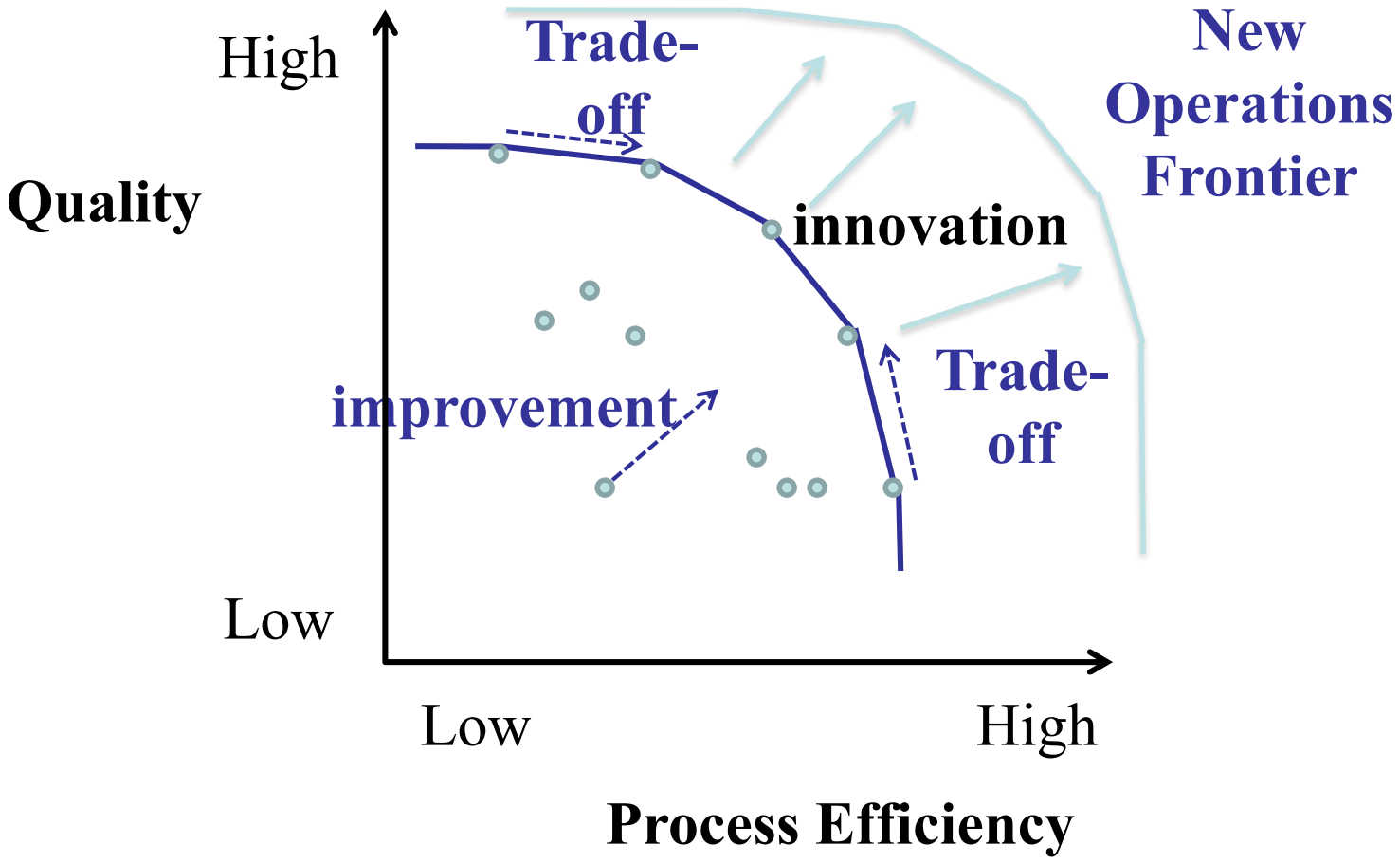
OPERATIONS FRONTIER



Operations Frontier & Process Design



PROCESS INNOVATION



OPERATIONS TACTICS, STRATEGY & *INNOVATION*

- Operations management involves both tactical and strategic issues

Tactical Issues	Strategic Issues
Ensuring that the firm is on the operations frontier	Choosing the correct position on the operations frontier

- **Operations Innovation**: Moving the Operations Frontier

THIS COURSE WILL FOCUS ON PROCESSES

- Making processes visible and *understanding* how a process works
- *Managing* processes
  - **Measuring** process performance
  - **Analyzing** and improving processes
  - **Challenges** in managing processes

HOW TO *MEASURE* PROCESS PERFORMANCE?

- Before we can manage or improve process, we have to know when a process is performing well and when it is not
- So what are the criteria or metrics of performance? What is good or bad performance?
- What is a GOOD PROCESS?
  - Productivity (maximize output for a given amount of input)
  - Efficiency (Minimize cost)
  - Effectiveness (Delivering the right product at the right time to the right customer)

Match supply and demand at least cost

Performance Metrics

- Process Efficiency (PFP, TFP)
  - Output / Input
- Process Utilization
  - Capacity Used / Total Capacity
- Quality
  - Defect rate
  - Time to completion
  - Service level (includes consistency)

    (e.g., Percentage of flow units that spend more than *x* amount of time within the process)

CLASSIFICATION OF A PROCESS (BY VOLUME)

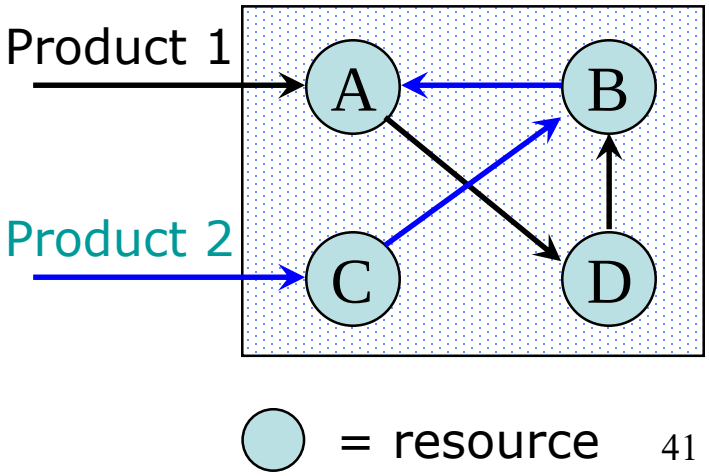
1. Job Shop

2. Mass Production (Flow or Repetitive)

3. Batch or Intermittent Production

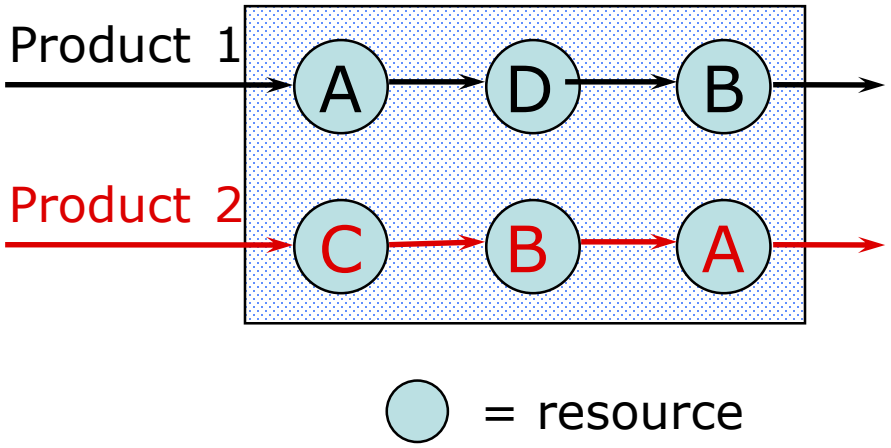
JOB SHOP PRODUCTION

- Low volume
- Engineered-to-order and/or made-to-order
- Manufacturing process is intrinsically variable and cannot be optimized once and for all
- Functional or process layout



MASS PRODUCTION - (FLOW OR REPETITIVE)

- Flow production: Non-discrete products using a continuous process
- Repetitive production: Assemblies using a continuous process
- Process Layout
- Low Cycle Times



INTERMITTENT PRODUCTION : (BATCH PRODUCTION)

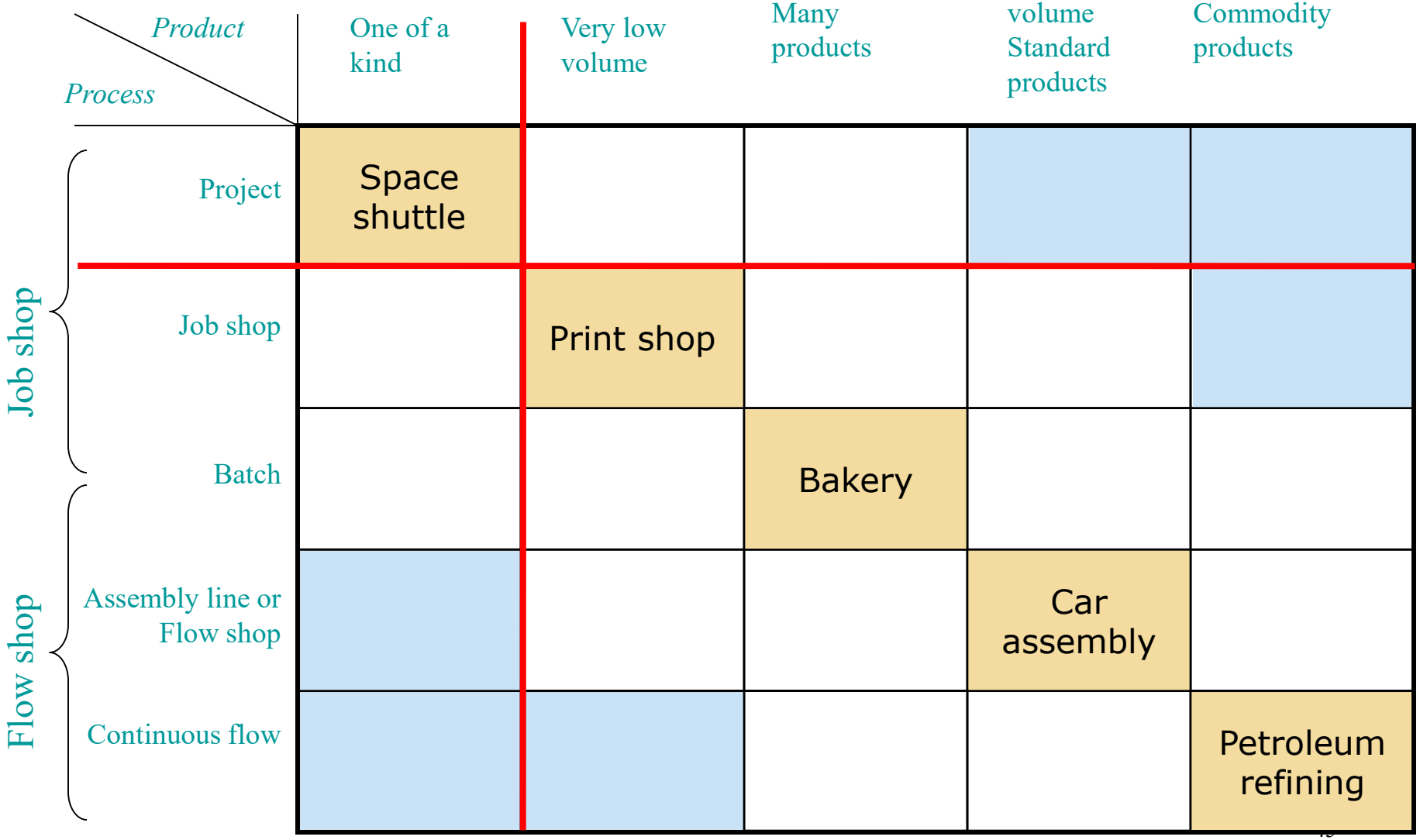
- A form of manufacturing in which the jobs pass through the functional departments in lots, and each lot may have different routing.
- Normally, involves setup costs and medium product mix competing for resources.

CHARACTERISTICS OF PROCESSES:
JOB SHOP VS. FLOW SHOP

Type of Process	Product Volume	Equipment Specialization	Product Variety	Machine Setup Frequency	Labor Skills	Variable Cost
Job Shop	low	low	high	high	high	high
Batch						
Flow Shop	high	high	low	low	low	low

Equipment specialization is the opposite of equipment versatility

Product-Process Matrix



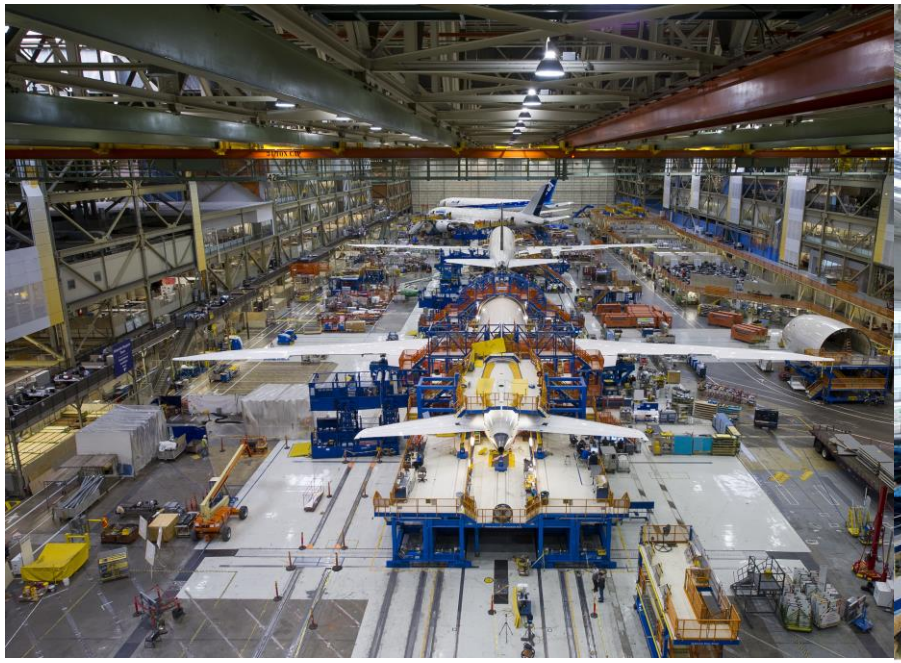
What is a Good Process?

LESSONS FROM THE PP MATRIX

- Importance of matching product attributes to process
- Importance of matching product/process position to competitive strategy
- The trade-off between the flexibility of a job shop and the efficiency of an assembly line

COMPARE TWO A/C MANUFACTURERS

- Boeing



- Airbus

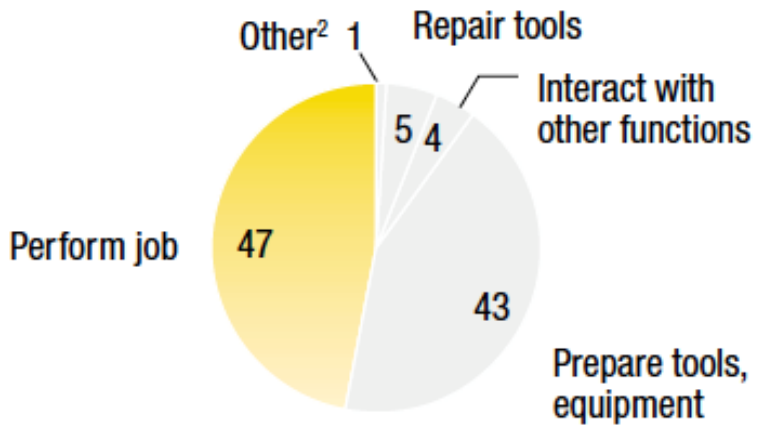
EXHIBIT 2

Wasted time

Percentage of time spent by activity (disguised example)

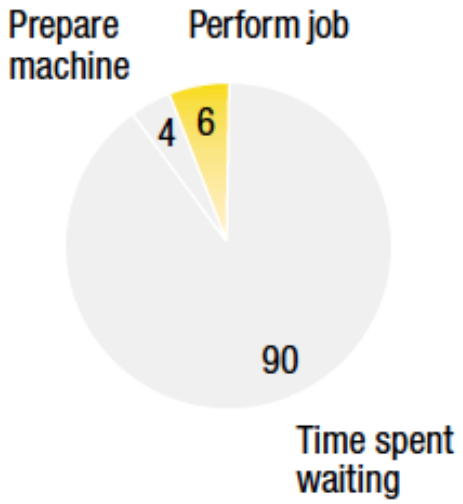
A-1 check[1] (airframe)

100% = ~30 scheduled person-hours



Landing-gear subassembly (machining T-bolt)

100% = 47 scheduled workdays



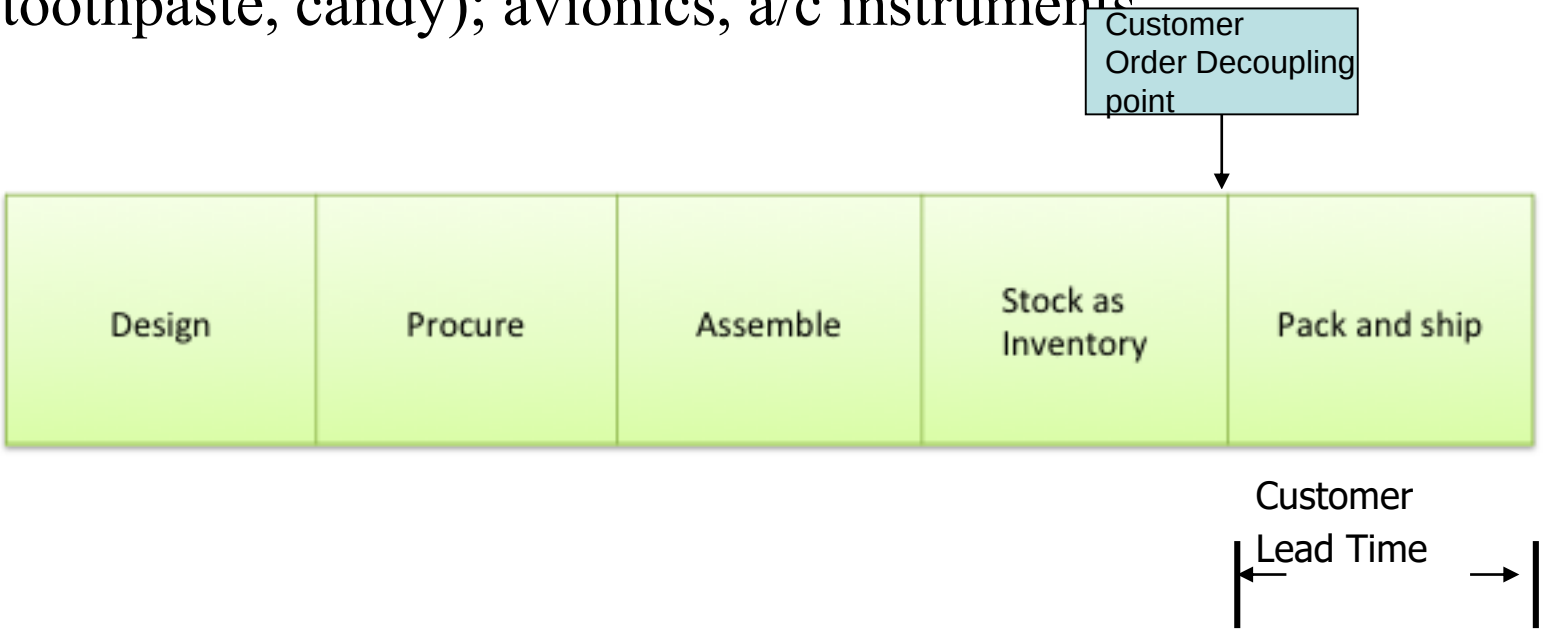
[1]Aircraft undergo multiple A-checks, whose type and sequence depend on the aircraft's particular maintenance program.
[2]Includes nonvalue-adding activities such as time spent waiting.

Classification of Processes: by Customer Interface

- Make to Stock (MTS)
- Make to Order (MTO)
- Assemble to Order (ATO)
- Engineer to Order (ETO)

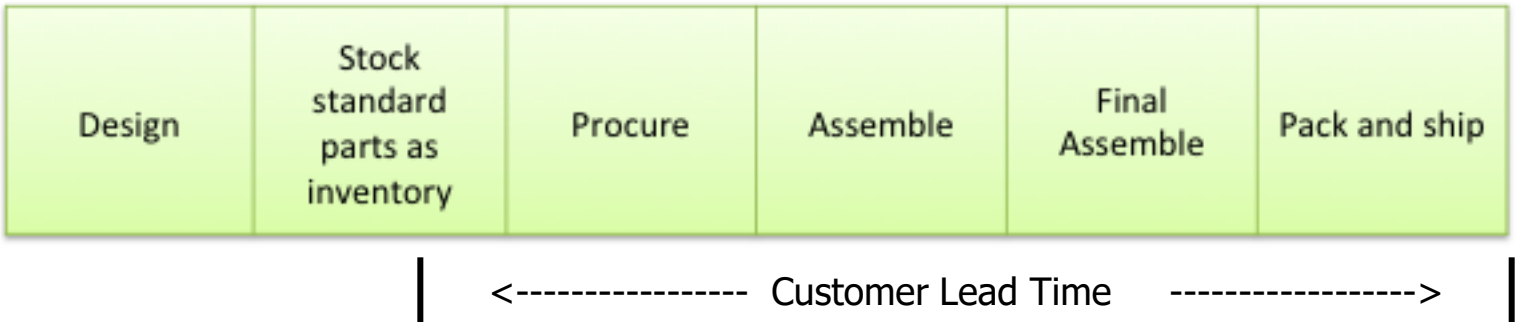
MAKE TO STOCK (MTS)

- Immediate delivery of goods
- Based on a predictable demand pattern
- Customer orders do not affect the production process directly.
- Examples: off-the-shelf items from big (cars, TV sets) to small (toothpaste, candy); avionics, a/c instruments



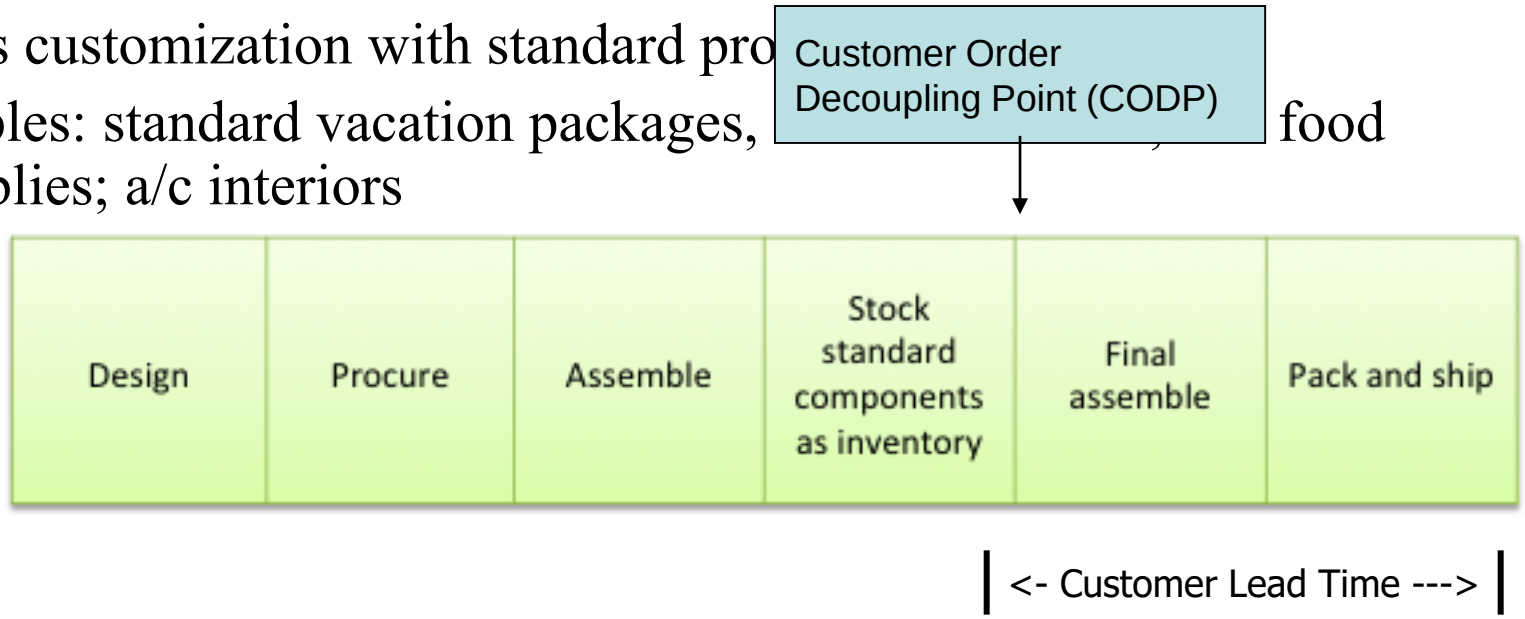
MAKE TO ORDER (MTO)

- Production starts after the order is received from the customer
  - Produced to customer specifications
  - Customer is willing to wait
  - Product is expensive to make and store
  - High product mix
- Examples: [illegible]ome, tailor made suit, commercial airplane, wedding cake, professional services; engines

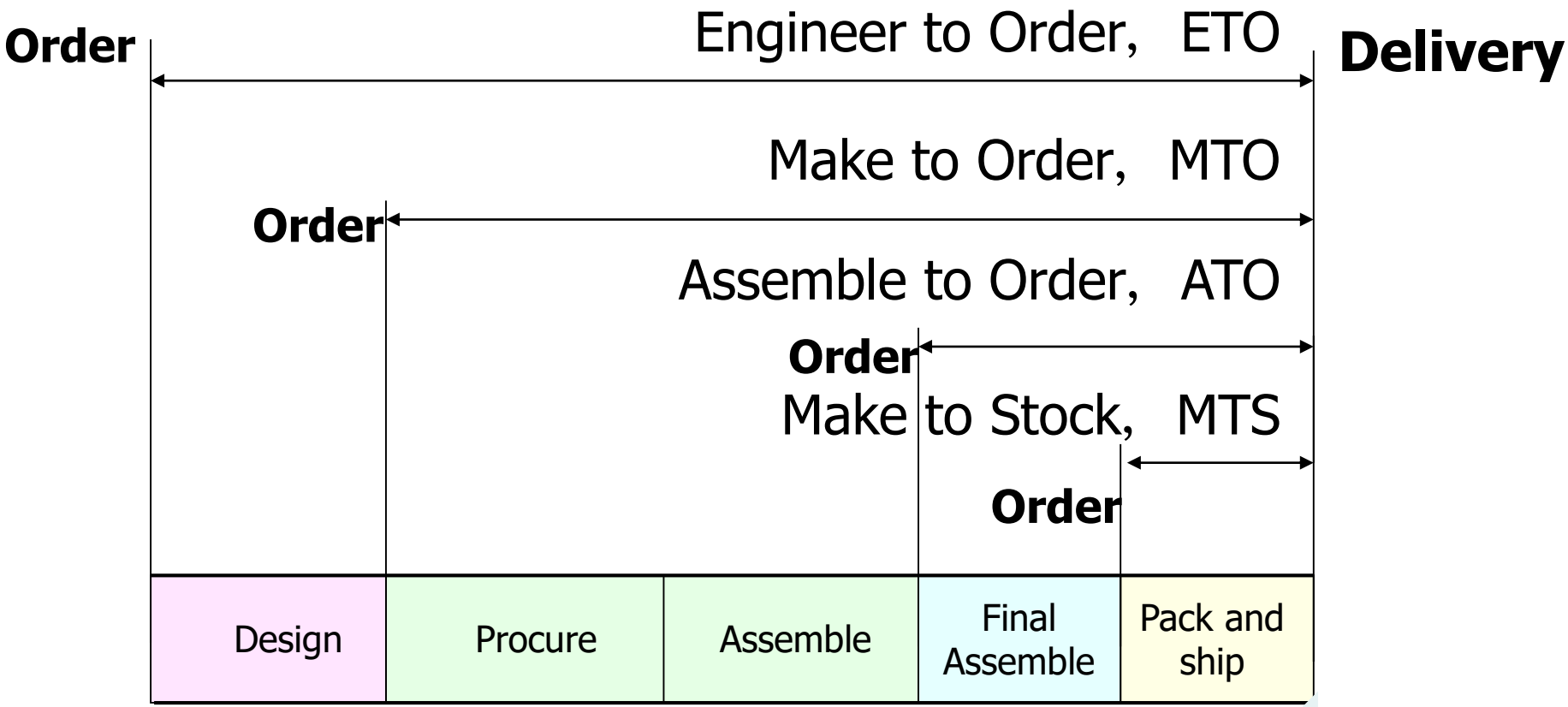


ASSEMBLE TO ORDER (ATO)

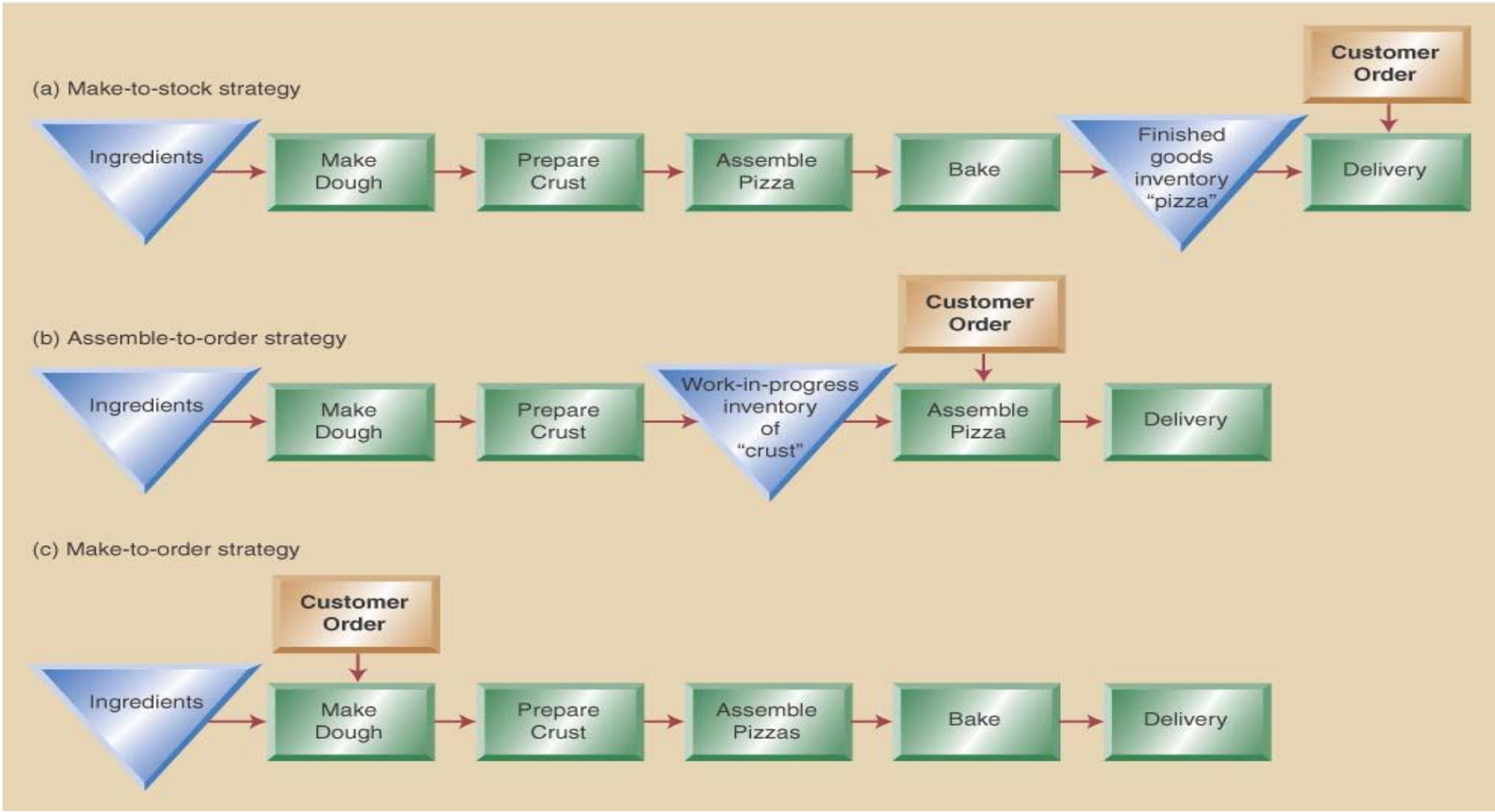
- Produce and stock Modular component
- Assemble the finished goods according to the component selected by the customer
- Modular design
    - Independent component units which integrate as a whole
- Allows customization with standard pro
- Examples: standard vacation packages, food assemblies; a/c interiors



MANUFACTURING ENVIRONMENTS



OVERVIEW OF STRATEGIES



THIS IS ALL OBVIOUS, RIGHT?

- Maybe in theory, but what happens in practice?
- What can go wrong?
- The business world is full of uncertainties and making sure that your processes perfectly is not easy!
- But … some companies consistently do a lot better than their competitors

WHAT CAN GO WRONG?

- Processes can be *badly designed*
  - E.g., do not fit the purpose
- Processes can be *inefficient*
  - E.g., mismatch between supply and demand
- Ideally, the process should be designed and managed to efficiently meet the demands placed on it

EXAMPLES

- Boeing

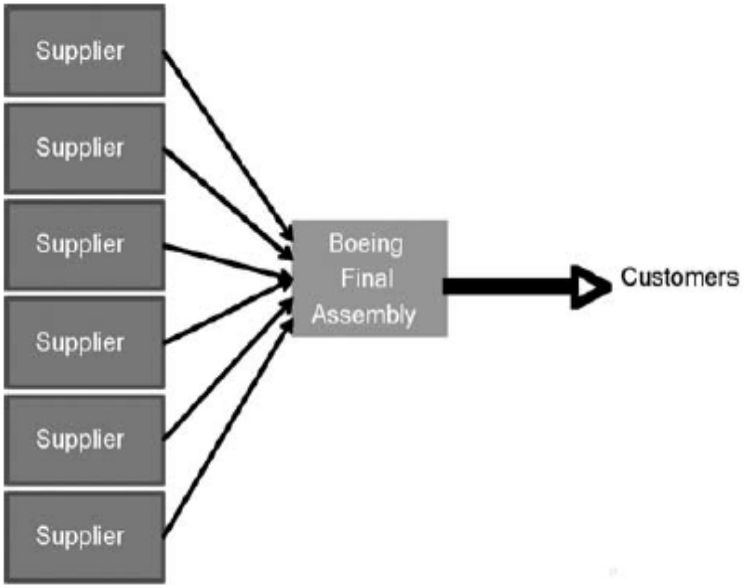
Boeing decided to develop the 787 Dreamliner to stimulate growth and respond to the demand for opening new markets. The 787 is revolutionary in design but also in materials. It required a whole new supply chain with a new set of vendors Boeing had not dealt with in the past. But the supply chain was also redesigned to reduce development time and effort.

Who paid for this mismanagement?

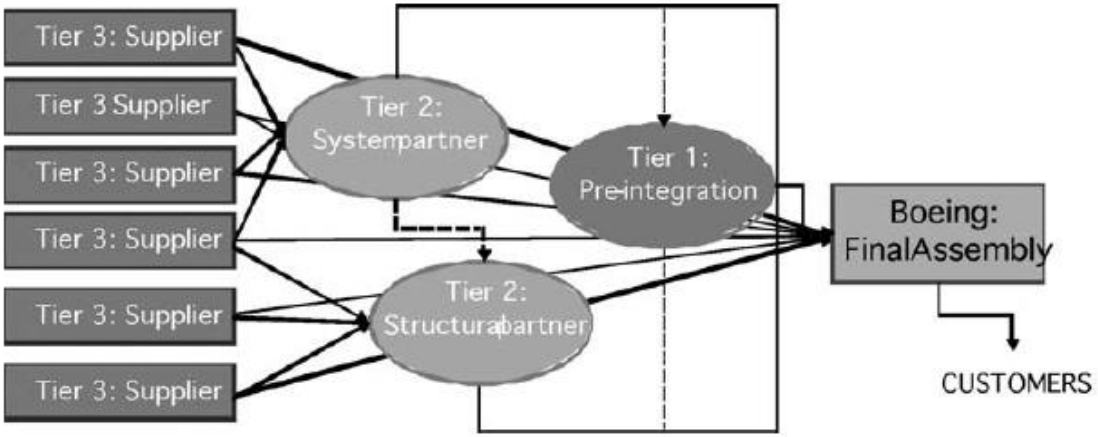
Partly due to this supply chain failure, in late 2008 Boeing stock dropped from $100/share to $40 per share.

MANAGING NEW PRODUCT DEVELOPMENT & SUPPLY CHAINS

Traditional Supply Chain



Dreamliner Supply Chain



EXAMPLES

- **Polar Vortex**: In January, 2014 when extremely cold weather hit Canada and the U.S., airports were shut for 2-3 days (Pearson Airport in Toronto accounts for 50% of flights was shut for 2 days!) "*We are really sorry about the inconvenience faced by the passengers and we apologize for that and I can promise, going forward, we can and will do a better job*," YYZ cancelled 600 flights, US airports in Midwest and northeast cancelled 3,100 on Monday and 4200 on Tuesday
- **Icelandic Volcanic Eruption**: On April 14, 2010 the Eyjafjallajokull volcano erupted sending, each second, 750 tones of volcanic material up to 30,000 ft. It left stranded over 7 million airline passengers and shutdown trade, business & general production. The government(s) response was considered a policy fiasco due to the 'blanket no fly' approach.

General Motors versus Toyota

	GM Framingham	Toyota Takaoka
Assembly hours per auto	31	16
Assembly space per auto	8.1	4.8
Assembly defects per 100 autos	135	45
Average inventory of parts	2 weeks	2 hours

Source: International Motor Vehicle Program, MIT, 1990

General Motors versus Toyota (2007)

	GM	Toyota
Revenue (billion $)	181.12	262.39
Net income (billion $)	-4.39	17.15
Number of employees	263,000	**323,650**
Revenue per employee	$688,672	**$810,733**
Income per employee	-$16.692	**$52,977**
Market Cap. (billion $)	$5.66	**$141.07**
Days of inventory	44	**31**

Source: finance.yahoo.com

Retail Industry (2007)

	Walmart	Sears
Revenue (billion $)	378.8	50.7
Net Income (billion $)	12.9	0.83
Number of employees	2,100,000	337,000
Revenue per employee	$180,381	$150,445
Income per employee	$6,143	$2,463
Days of inventory	45	103

Source: finance.yahoo.com

AIRLINE INDUSTRY

- In January 2015, Southwest Airlines Reports Fourth Quarter And Record Annual Profit; 42nd Consecutive Year Of Profitability
- Between 2001 and 2005, the US airline industry posted $42 billion in net losses
- In 2008 alone they posted $4.2 B in losses
- In 2012 they had posted the 4th consecutive year of profits
  - Why? Improved operations & lower costs or consistent strategy? (capacity discipline)

System Total Expense per Equivalent Seat Mile (CESM ex fuel and Transport Related)											
STAGE LENGTH ADJUSTED											
Cents per Equivalent Seat Mile											
	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
American	8.61	8.48	8.44	8.67	9.78	9.8	9.72	10.34	9.79	9.33	9.82
Continental	9.05	8.67	8.66	8.84	8.99	9.35	9.87	9.58	[illegible]	[illegible]	[illegible]
Delta	8.33	7.45	7.67	7.69	7.7	8.33	8.36	8.5	8.89	9.05	9.45
Northwest	8.44	8.66	7.66	7.66	8.28	8.75	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
United	8.68	8.35	8.42	8.7	10.11	8.94	9.71	10.56	11.03	11.06	11.19
US Airways	7.83	6.49	11.1	9.82	9.14	7.93	7.82	7.86	7.98	8.34	7.99
America West	5.93	6.53	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2-sub Network	**8.45**	**8.06**	**8.06**	**8.20**	**9.07**	**8.92**	**9.05**	**9.36**	**9.65**	**9.68**	**9.86**
Southwest	4.7	4.69	4.9	4.96	5.14	5.51	5.81	6.05	6.29	6.35	6.65
jetBlue	5.36	5.45	5.41	5.46	6.05	6.34	6.51	6.54	6.73	6.97	7.23
AirTran	5.13	5.24	5.04	5	5.08	5.33	5.63	5.94	[illegible]	[illegible]	[illegible]
Frontier	6.48	6.23	6.17	5.84	5.86	5.81	6.4	7.05	6.61	6.66	5.92
Virgin America	[illegible]	[illegible]	[illegible]	8.14	13.39	7.16	7.46	7.87	7.85	7.78	8.42
2-Sub LCC	**4.98**	**5.00**	**5.12**	**5.16**	**5.59**	**5.74**	**6.04**	**6.26**	**6.51**	**6.65**	**6.89**

LESSONS

- Every organization (manufacturing or service) has a process at its core for creating goods and services
- More visible measures of performance (e.g., profits, return-on-assets, customer satisfaction) directly depend on how good this process is

Secrets of Better Execution

- Understand the "physics of process flows"
  - How to map processes?
  - How to measure and analyze process performance?
  - What are some key operational challenges (or trade-offs)?
- Once you understand the process, you can
  - Design processes
  - Optimize process performance
  - Overcome operational challenges

The Operations/Logistics Strategy Triangle