

# Orchestrating Supply Chain Opportunities: Flexibility, Agility, Real Options

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\*based on a book “Orchestrating Supply Chain Opportunities” by Iyer and Zelikovsky,  
Business Expert Press

# Questions...

- What happens when the unexpected occurs? Say, an event occurs throws the status quo into turmoil.
- What if your demand spikes by 50% in just a few months, what then?

Conversely,

- What if your business declines by 40% in 1 month, what do you do?
- Suppose a natural disaster happens,
- Or a new technology creates a significant, but unplanned opportunity?
- We call these supply chain opportunities.

# Business Challenges

- Current business challenges include - significant shifts in product volumes and customer preferences;
- Global industry shifts that affect manufacturers and distributors;
- Environmental regulations;
- New technologies that revolutionize products;
- Catastrophic climate effects and wild economic swings....

**What do all of these drivers of change have in common?**

A short window of opportunity to attain a significant advantage.

**How should a company position itself to capitalize on such stretch opportunities?**

# Imagine

- A supply chain impact that is significant on the
  - Demand side
  - Supply side
  - Or both
- A **short time window** (from 1 day to 2 weeks to a few months)
- An **opportunity to react** within this time window.....
- What are examples of such opportunities?

# Harry Potter

# Harry Potter Book launch event

- Harry Potter book launch – 12 million books shipped, 8.3 million sold within 24 hours on July 21 2007
- Large queues – selling began at midnight
- Outside Waterstone's Bookshop at the East End of Princes Street (source image [http://www.edinphoto.org.uk/0\\_street\\_r/0\\_street\\_views\\_-\\_rose\\_street\\_harry\\_potter\\_launch\\_025634.htm](http://www.edinphoto.org.uk/0_street_r/0_street_views_-_rose_street_harry_potter_launch_025634.htm))



# Harry Potter Supply Chain

- Publisher Scholastic
- 70% shipped by road
- Everyone started selling at midnight July 20
- Estimated that 100 airplanes involved
- Estimated that 9,000 trucks deployed
- 8.3 million books sold in one day
- Large discounts (40%) on books across competing retailers
  
- How was this supply chain managed ?

# Scholastic Planning, distribution ....

- Collaborate with printers to produce
- Reserve space at distribution centers to hold inventory
- Fly inventory to staging areas for truck pickup
- Coordinate with trucking companies that held products at locations with 24 hour security
- Move product to the store close to midnight for store sales
- How should a supply chain manager plan for such demand surges ?



# iPhone

# iPhone launch

- Large queues to be the first to get the new model iPhone 4s, iPhone 5, iPhone 6, 7, 8..
- Source <http://mashable.com/2014/09/04/airtasker-australia-iphone-line/#1crXPX0LoEqh>



# iPhone Supply Chain

- 10 million sold the first week
- Where did these phones come from ?
- What did the iphone supply chain have to do to prepare ?

# What about Tesla

- Past manufacturing volumes.....
- Growing expectations of delivery volumes (feel short by a few thousand last quarter)
- Where will production capacity, batteries etc come from ?
- Will the Gigafactory for batteries, larger than the global existing capacity for batteries succeed in China ?
- Where will the battery materials, induction motor magnets materials be sourced from (Cobalt, Nickel, Lithium, Dy etc) ?

# What should Tesla do ?

- Only accept offers for the more expensive versions ?
- Outsource ?
- Create a continuous flow of features (software, new models etc) to avoid the need to depend on advertising ?
- Expand global operations quickly ?

# Bicycle Locks

# Demand Impact

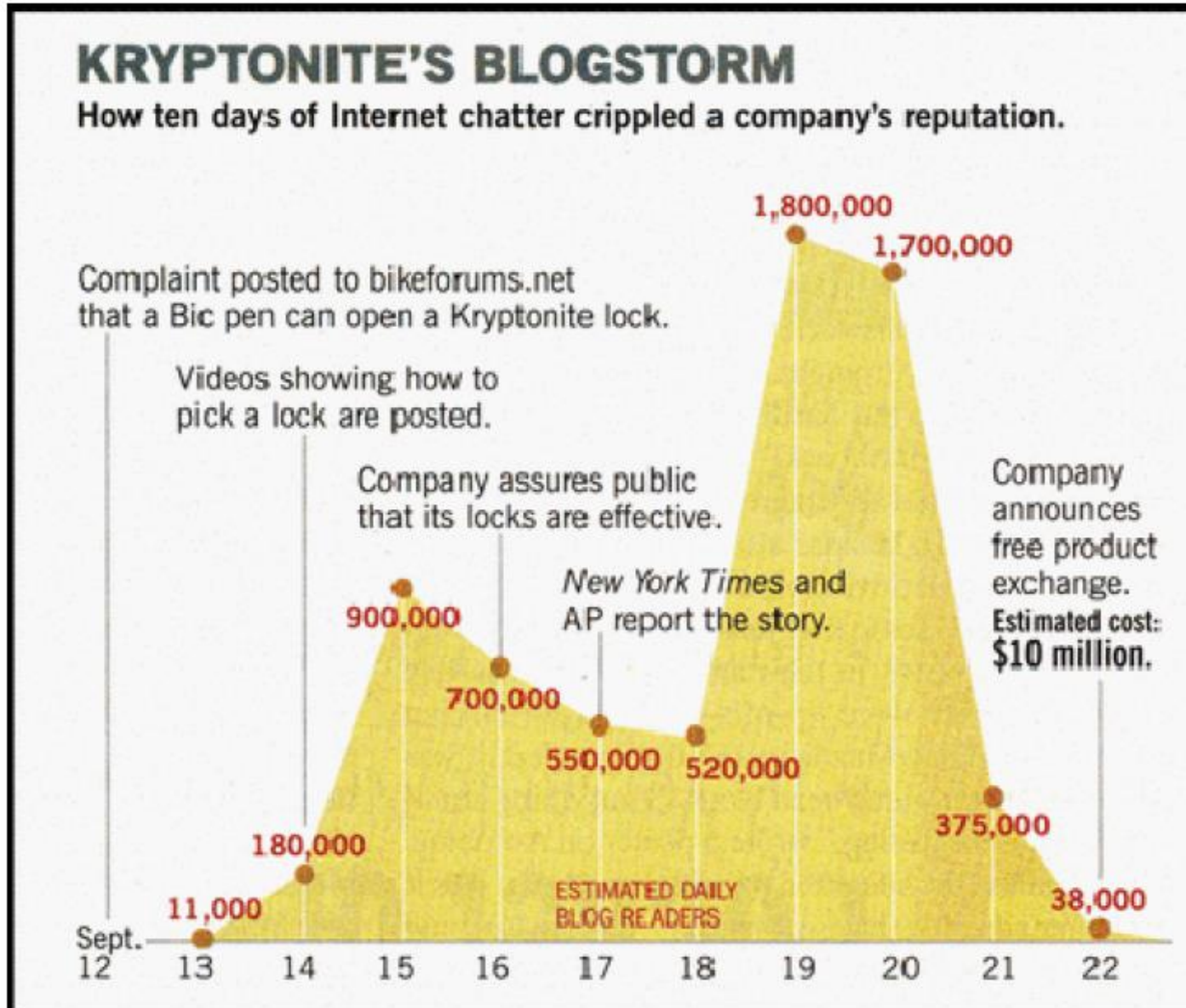
- The Kryptonite bicycle lock story
- Lock developed in 1972 by Chicago Lock, owned by Ingersoll Rand
- The Fahgettaboutit lock promised \$3500 replacement warranty for the bike
- All was well until
- ... a video appeared

# Video





# What was the impact ?



(Source: [Fortune](#), 2005)

# What did the company do ?

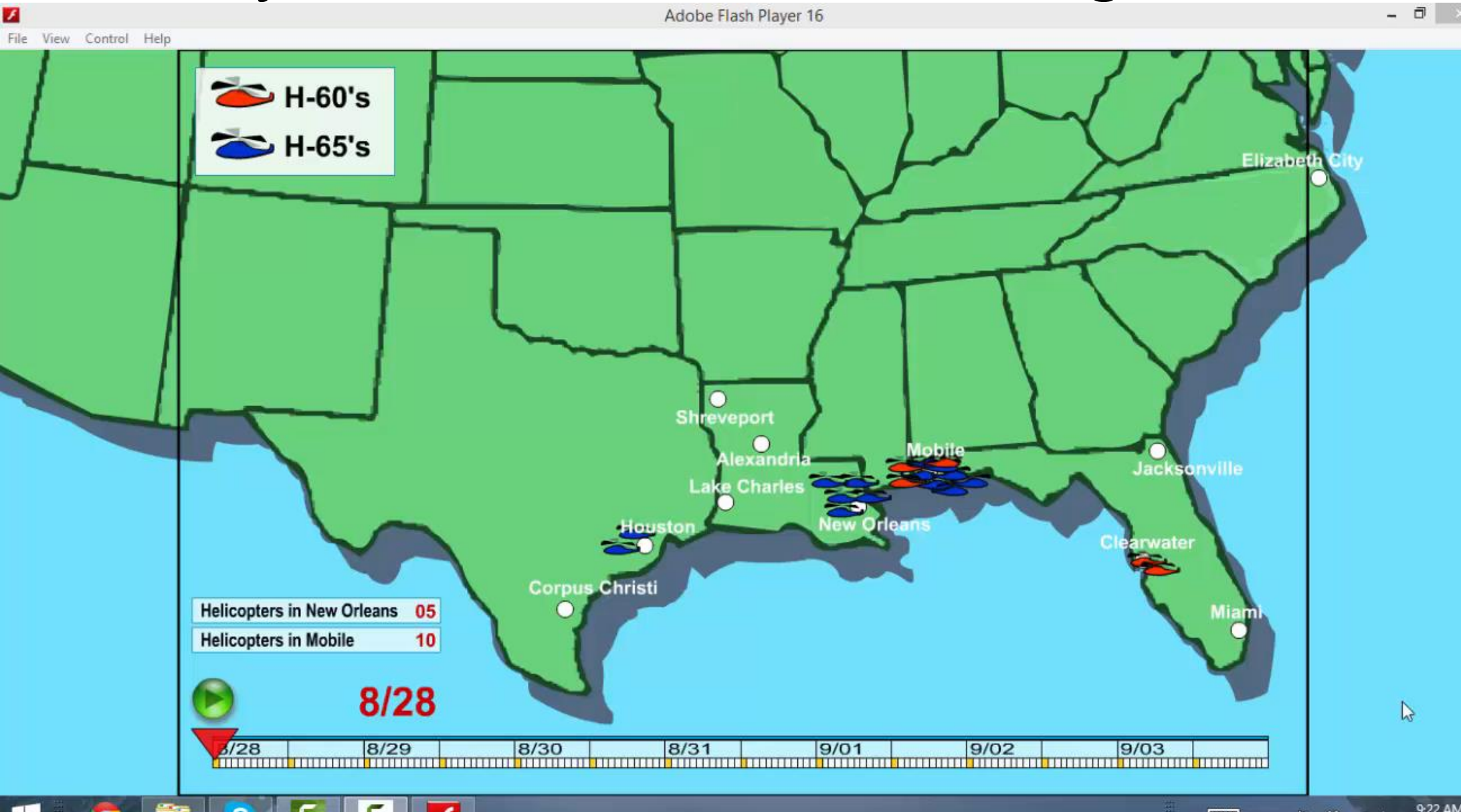
- Source a new design using a different technology – a disc based design
- This alternate design and potential supplier was in place
- Production ramped up to cover potential demand
- Promise to replace ALL existing locks with the new design
- Competitors also worked to change their designs
  
- During this entire period, the company remained quiet in the blog space
  
- In the end, most customers never asked for a new lock

# Hurricane

# US Coast Guard and Hurricane Katrina

- Disaster in 2005, one of the deadliest hurricanes to hit the US
- 1245 deaths, \$ 200 billion in damages
- 60,000 people rescued, Coast Guard rescued 33,500
- This number rescued in 17 days was greater than the total in 2004
- 43 aircraft, 2000 personnel
- All 26 airstations supplied assets by adjusting their priorities
- Teams operated interchangeably
- Total cost under \$20 million

# Asset Adjustments as conditions change



# How did the Coast Guard do it ?

- Significant focus on training
- Cross Training of Teams
- Independence of initiative
- Shared assets across airstations
- Focus on solution of unstructured problems

# Walmart and Katrina

- Trucks with water ready to drive in as soon as hurricane hit landfall
  - Prices frozen to pre-hurricane levels
  - 100 truckloads donated
  - Trucking capacity offered to transport donated goods
  - Free prescription refills during the disaster
  - Pay utilities for donated space available for relief
- 
- The retailer used a crisis center and field level authority to respond

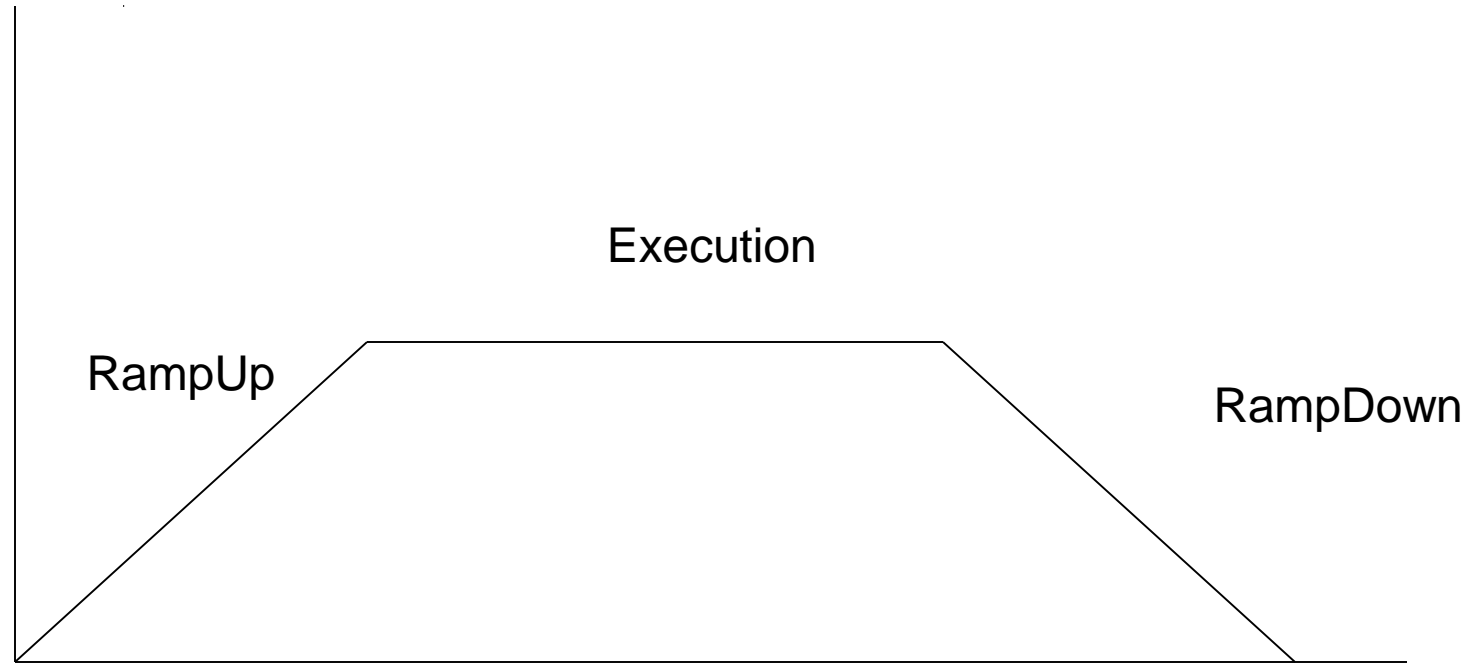
# United Nations Logistics



# Humanitarian Logistics

- Humanitarian Logistics - deliver aid for natural or manmade disasters.
- Over 35 million people in the world depend on emergency relief
- Every year, over six to eight billion dollars are spent on relief efforts.
  
- During disasters, many organizations involved
- Often foreign and in the past 30-40 years, NGOs have increased from 938 in 1972 to over 26,000 now

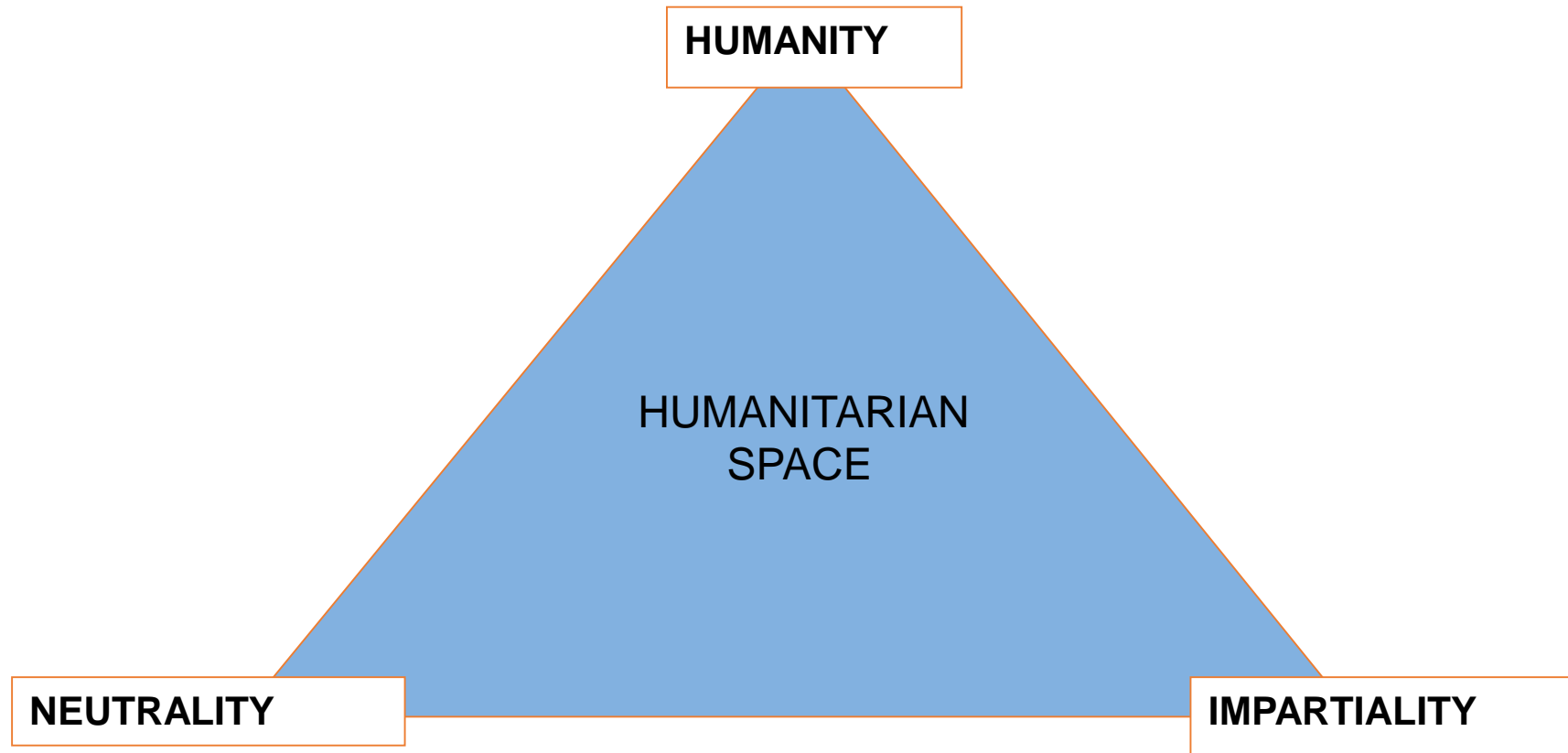
# Anatomy of an Engagement



# Humanitarian Principles to be respected

- **Humanity:** human suffering should be relieved wherever, if found
- **Impartiality:** there should be no discrimination
- **Neutrality:** the intervention should not benefit one party over another

# Humanitarian Principles and Space



# Types of Coordination

- By Default – just provide information, let coordination evolve organically between NGOs
- By Consensus – Use meetings between NGOs to develop sharing schemes, consensus
- By Command – centralize information gathering and decision making

EXAMPLES..

# Nature of Coordination

- Coordination by Command
- UN coordinated use of barges in Uzbekistan to be shared by NGOs trying to get relief into Afghanistan
- Became a traffic cop – prioritizing access, determining schedules etc

# Nature of coordination

- Coordination by consensus
- WFP was flying in food into Rwanda and returning empty
- UNCHR was flying out refugees and flying in empty
- Coordinate between these two organizations – coordination by consensus

# Nature of coordination

- In other cases
- Just have a bulletin board to share weather, security information
- Individual NGOs decide how to use it
- Coordination by default



# Coordination Types and Disaster Lifecycle Phase

	Ramp Up	Sustain	Ramp Down
Command			
Consensus			
Default			

What is the framework ? FAR

# Flexibility

- KPI – what is designed VARIETY i.e., range of SKUs that your supply chain can accommodate ?
- How much time will it take to accommodate that variety ?
- Set some broad boundaries to test your supply chain capability

# Agility

- How much volume fluctuation can your supply chain absorb ?
  
  
  
  
  
  
  
  
  
  
- How much time will it take to adjust ?

# Real Options

- What are choices you have made that DO NOT optimize for today's environment but COULD help when conditions change
  
- What is the cost of this SLACK ?

How do you build in **FAR** into your supply chain ?

# Reasons for a FAR approach

- Significant growth in demand
- New Product Launch
- Demand Spillover due to competitor failure or external stimulus
- Impact of Mergers and Alliances
- Disasters

# Agility – Real Options

- Have Excess Capacity on tap (Buffer capacity)
- Buy a Capacity Option (Backup agreements)
- Subcontract (like Peaking plants for energy supply)
- Flexible Labor use - harness Company Culture



Supply Chain Step	High Agility
Network Planning	Centralized DC strategy
Product Design	Mix of automated and non-automated production. Manual assembly is possible.
SCM	Vendor managed inventories. Quick turns, rapid response (JIT). Focus on quick response, not lowest unit cost.
Design and Build	Scalable processes. Extra space for rapid equipment and labor deployment. Design choices focused on agility of labor and process.
Systems	Scalable and highly integrated with vendor, supplier and carrier systems.
Manufacturing	Scalable production equipment, flexible labor force. Ability to produce small to large lots on demand.
DC Services	A-frames for picking, Tilt Tray for sortation
Transportation	Less carrier options. Likely hood to utilize USPS, UPS, FedEx type carriers.
Customer Service	Browser based systems, highly scalable. Flex work force for handling volume fluctuations.

# Flexibility – Real Options

- Plan for the worst case variety – to fly blind, get some air space
- Design Flexible Resources – Larger bins to accommodate various sizes
- Maintain a portfolio of capabilities – hybrid of automated and manual, pick to light, WMS
- Scenario based adjustment – 7/11 Japan assortment adjustment over the course of the day

# CEO Questions for a supply chain manager

- What are some of the **significant opportunities** that may arise for our business in the areas of product changes, technology shifts, regulatory changes, new market opportunities etc?
- How many **different supply chain configurations** can we operate with existing assets and how different are they from each other?
- How **long** would it take to accomplish these **switches** so that transactions are consistent and execution remains seamless from a customer perspective?
- How does the company detect **changes in the business environment** and upside capabilities (organizationally)?
- What **options** do we have with the supply base and the demand base to manage our business in the face of disruptive changes?
- How has **globalization** of our company and our suppliers provided us new opportunities to manage upside opportunities ?

# Summary

- Anticipate that there will be Supply Chain Opportunities for STRETCH
- These will be short window profitable opportunities
- Build in FAR into your supply chain choices
- Leverage FAR to Orchestrate your Supply Chain

# Thank you

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