

Supply Chain Redesigns

Product Innovation

- **Hyundai**, customized small-car Santro, to suit Indian market conditions with 90% local components.
- **Nano** is a fuel efficient one lakh car.
- **Cummins** produces diesel engines and power generators for small retailers, regional hospitals, and farmers
- General Electric announced two revolutionary products; **\$1,000 handheld electrocardiogram device and a portable, \$15,000 PC-based ultrasound machine.**
 - Originally developed for emerging markets (the ECG device for rural India and the ultrasound machine for rural China), now are being sold in US, pioneering new uses for such machines.

Nano is a great Example of the blue ocean strategy

- Nano is innovative on multiple levels from its engineering to marketing & to its manufacturing.
- Tatas collaborated with suppliers such as Bosch and Delphi, in early-stage design, challenging them to be full partners in the Nano innovation by developing lower-cost components
- Tatas plan to build the Nano as a kit, shipping parts to a local business for assembly.
 - This significantly lowers Tata's capital costs. The company doesn't need to build lots of assembly plants or hire and train assembly workers, or take responsibility for shipping the finished product
- **The Nano shows that a new world order is possible in the auto industry. It shows a glimpse of what's to come.**



Red & Blue Ocean Strategies

- Markets are made up of red and blue oceans.
- The red ocean represents the known market space where all the industries currently exist. In this space, the potential for profits and growth decrease as the market space becomes congested & companies try to outperform each other
- Blue oceans are untapped market spaces with opportunities for highly profitable growth by opening up a larger 'pie.' i.e. new demand creation
- Blue Ocean Strategy is where companies can shift the productivity frontier outwards by reconstructing market boundaries to create a bigger economic pie.

Pricing the Product

- Tata didn't set the price of the Nano by calculating the cost of production and then adding to margin
- Rather it set \$2500 (One lakh INR) as the price that it thought customers could pay and then worked back, with the help of partners willing to take on a challenge, to build a \$2500 car that would reward all involved with a small profit

The Changing Face of Auto Industry

- The climate change problem and the volatile price of oil have made automakers around the world seek alternatives to petroleum-fueled power trains.
- Car models are being innovated with several power-train options : Electric in major Chinese cities struggling to reduce air pollution, Ethanol in sugarcane-rich Brazil, Diesel in oil-rich Russia

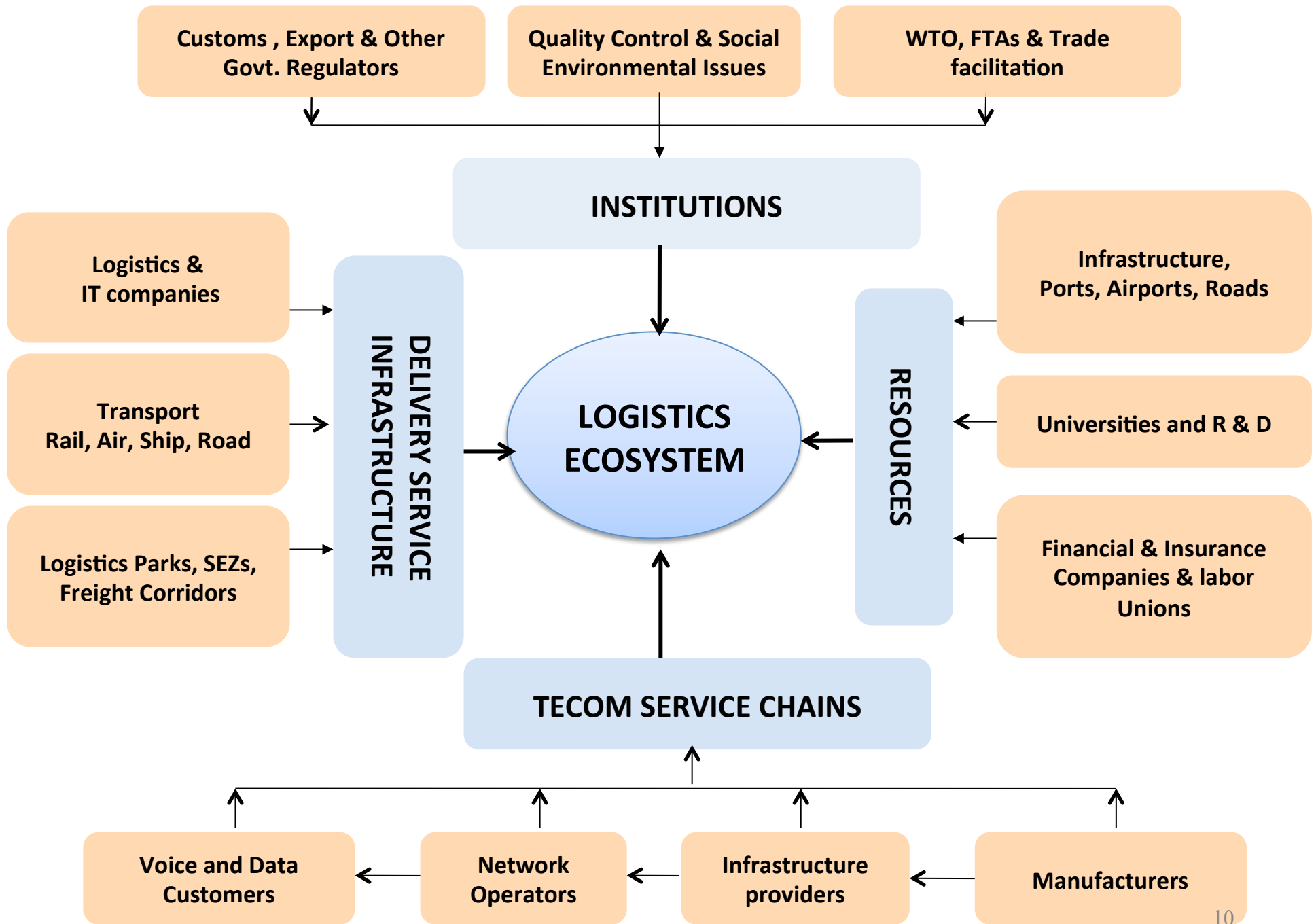
Business Model Innovation

- *Business model innovation (BMI) is a reconfiguration of activities in the existing business model of a firm that is new to the product/service market in which the firm competes.*
- Business model innovation actually involves importing a business model from one product/service market into another. For instance:
 - Southwest Airline borrowed a business model from interstate bus transportation and applied it to the airline industry.
 - McDonald's brought traditional assembly line techniques into the fast food business.
 - Xerox does not sell copying machines but installs and maintains copying machines in offices and charges per page basis.
 - Power by the Hour: aircraft engines are paid for the number of hours they are in the flying aircraft

CEMEX provides Construction Solutions not Cement

- **Lorenzo Zambrano- Cemex CEO 2001** :We need to supply not only Cement but also a broad range of other building materials leveraging our world class logistics and distribution capabilities to help our customers succeed.
- **Customers of Cemex:** Distributors, Small house builders, Ready mix concrete dealers, Value added transformation companies: slabs, pre-fabricated concrete blocks , Large infrastructure projects: airports, roads, housing complexes, etc.
- Cemex works with its customers and provides solutions which require expertise much beyond manufacture of Cement.

Delivery Service Innovations



Innovations In Logistics

- **Product and service Innovation**
 - Containerization, Transshipment, Supply hubs, Cross docking, Outsourcing, Modularization & Standardization, Outsourcing
 - Packaging , late customization, merge in transmit, Customs, sensor networks for visibility
- **Regulatory Innovation**
 - Green, VAT, Customs, Trade: Knowledge, Connections, Foreign exchange, FTAs & Trade facilitation
- **Connecting services and Technologies**
 - RFID, GPS, 3PLs, 4PLs, Data integration and mining, Remote monitoring and Execution, IT services, Cloud
- **Resources and Management**
 - Training and other HR approaches, Efficient operations with poor industry inputs, Supply Chain Finance, Innovative Governance models

Disruptions Catalyzed by Cloud

- The growth of cloud delivery models helped the start up to follow pay per use model rather than buying , installing and maintaining servers.
- The new Cloud architecture can address the needs of Orchestrators trying to manage loosely coupled network partners
- Other Industries such as health care, Finance, Educations get disrupted by Cloud. In heath care patient records can be accessed from cloud.
- **Cyber Security, Breach of Trust are big issues**

Big Data: Disruptive Changes in Retailing

- Retailers gain an understanding of how shoppers move around their stores – where they go, in what order, how long they stay, when they come to the store, and how all of these questions map to actual sales.
- Retailers are developing predictive models for price discounting, advertising, and couponing.
 - Forecasting based on past data, batch size calculation using square root formula are being replaced by real time visibility and delivery on demand
- **Wal-Mart's** technology platform, tracks connections between people, products, brands and uses this to make product recommendations to customers.
 - Wal-Mart aggregates and mines POS data to predict customer buying behavior and links inventory and purchasing data with the suppliers to speed inventory turns and lower holding costs.
- **Netflix** has a 5-star recommendation system for each subscriber from their viewing habits using sophisticated algorithms
- **Target** predicted pregnancy in a Teen based on her buying patterns.

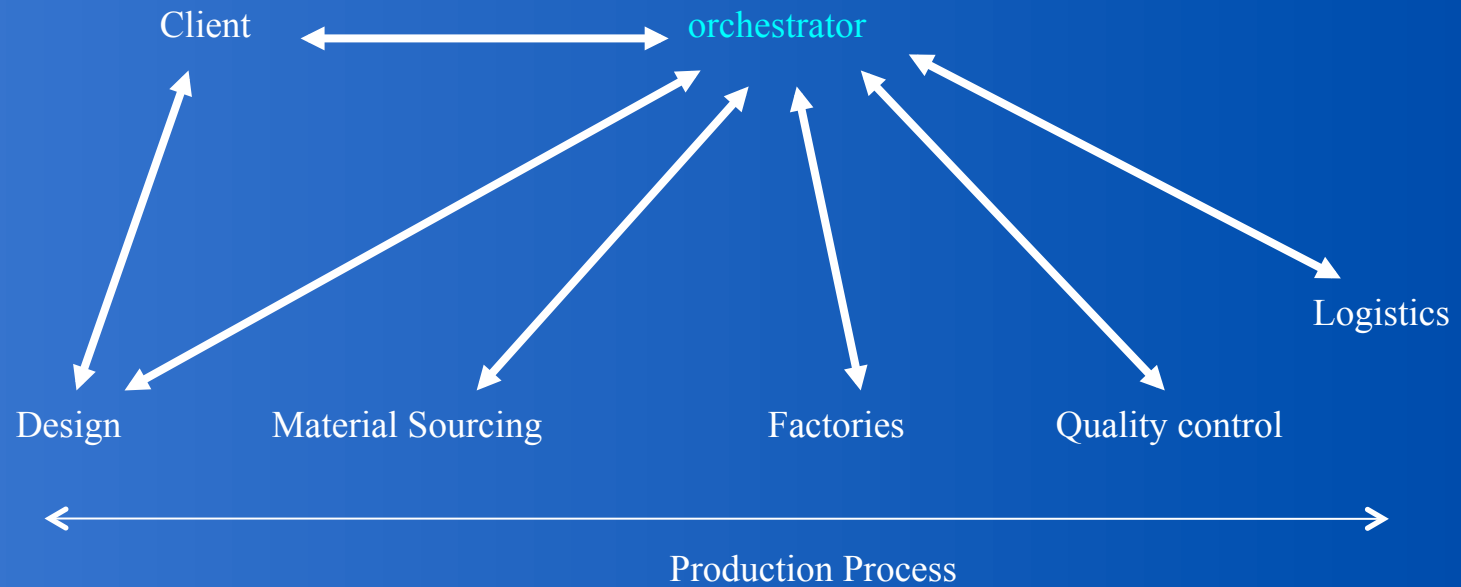
Big Data Explosion

- What once was the stuff of science fiction has become an everyday occurrence.
- Exabytes. Zettabytes. Yottabytes. Sensors, asset intelligence, mobile devices and constant streams of unstructured communications have created digital exhaust that can capture who we are and how we live, work and play
- Driven by computer algorithms, recommenders help consumers by selecting products they will probably like and might buy based on their browsing, searches, purchases, and preferences

Governance: Recent Trends

- Do not own all assets – Orchestrate : New Mantra in Businesses
 - Li & Fung, does not own any factories but orchestrates a network of 15,000 suppliers and 29,000 employees in 40 countries, supplying goods to well known consumer brands .
 - Boeing’s 777 jet is assemblage of three million parts from more than 900 suppliers in 17 countries around the world. Boeing produces only the wings and fuselage, and assembles the aircraft.
 - Southwest, JetBlue and RyanAir retained only the core of branding and the concept of the airline and put all other operations out to bid: **They leased engines & aircraft, and contracted out baggage handling and maintenance**
- 4PLs are integrated logistics providers who aggregate and provide transport, warehousing and distribution services to several customers by orchestrating 3PLs, Owners of warehouses and Trucks.

Interaction With Various Stakeholders



Innovations in Resources

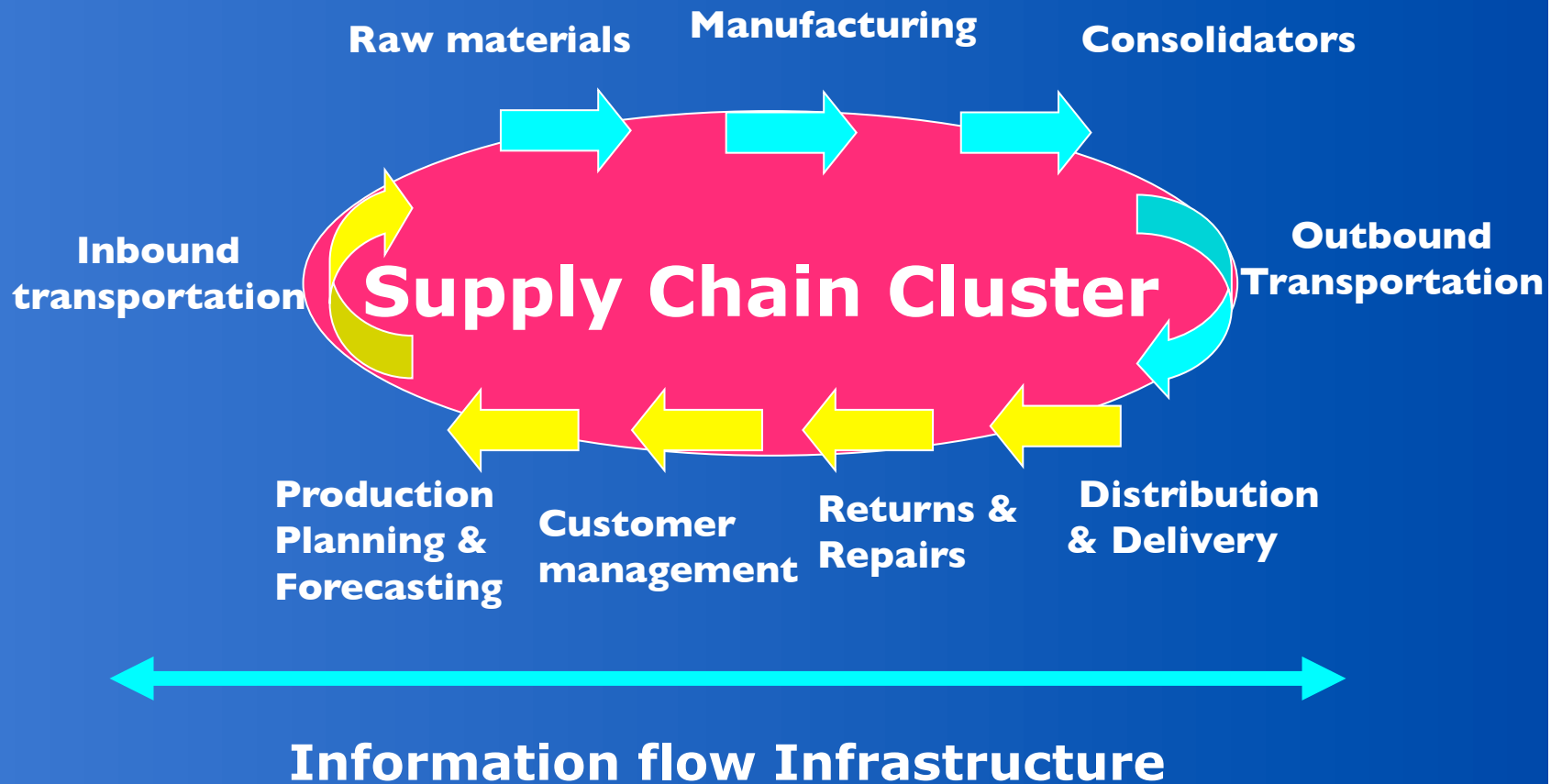
IT Resources

- Search Engines, Wireless communications & Internet are biggest innovations of recent times. Google, Yahoo and several other have become house hold names
- Their convergence created On Line Libraries, Wikipedia, Online markets, Online deliveries of digital products, Advertising, Working from Home, Video Conferencing, Interconnected camera system for security, Cloud computing
- Cell Phones are devices using you can access all the above facilities from anywhere anytime.

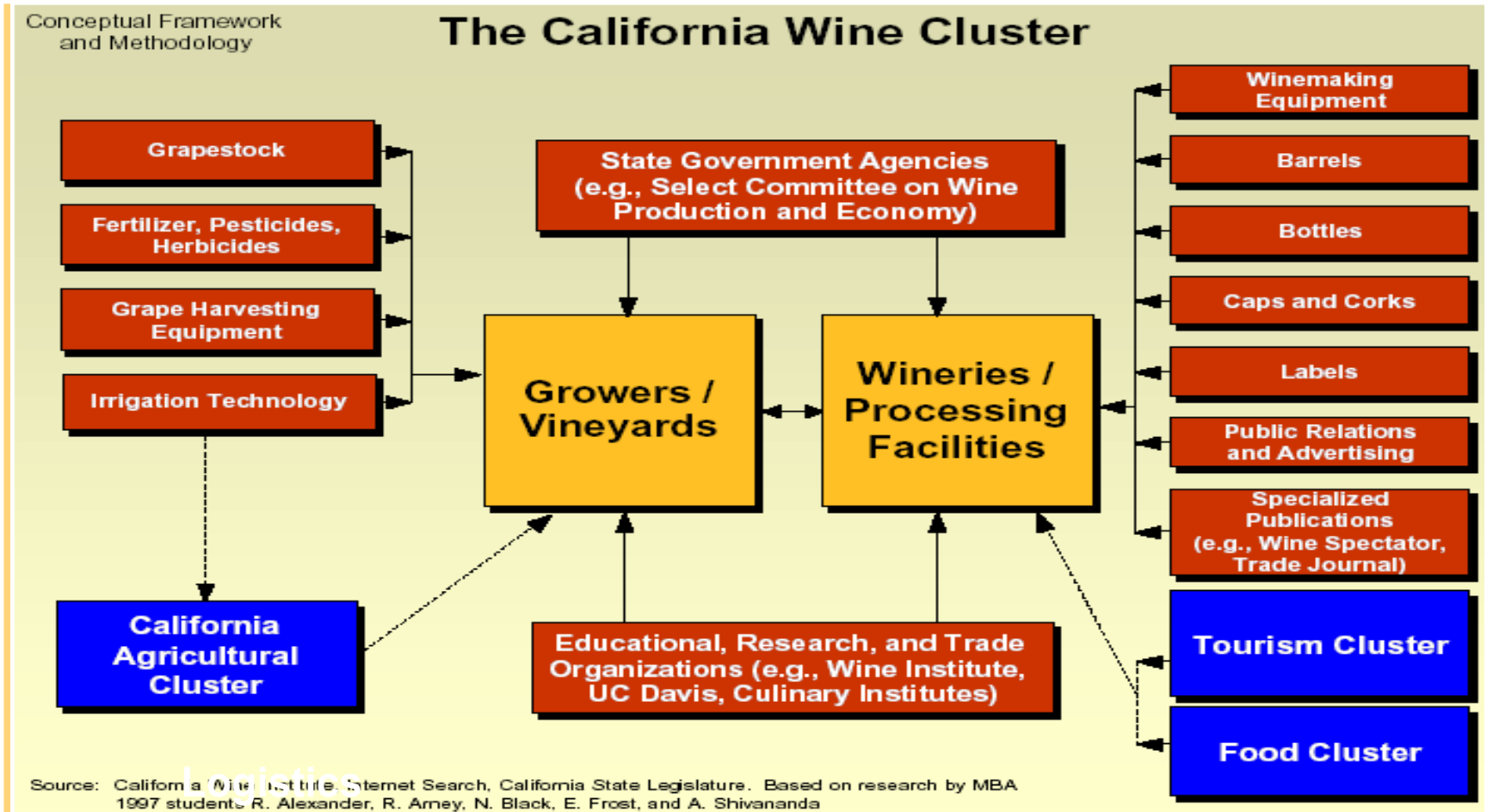
**Ecosystem Aware
Global Supply Chain Management**

Supply Chain Clusters

A competitive Advantage



**Ecosystem Aware
Global Supply Chain Management**



- California is now a significant player in the wine industry challenging Italy, France and other European countries.
- UC Davis has helped with such new techniques as mechanical harvesting, drip irrigation, and field grafting

Innovations in Institutions

Innovation: Role of Government

- The capacity of a nation to innovate is the cornerstone of its productivity.
- Innovation refers to a country's ability to upgrade its business environment continually to support and encourage its companies competitive nationally and internationally.
- Governments must increasingly assume new roles -- as **catalysts** for market development, **enablers** of productivity and efficiency, **regulators** ensuring that markets remain open and equitable, **promoters** of private sector expansion & **stimulators** of human and capital resource development.

Deregulation as Innovation

- Many successful services companies owe their existence and success to the opening up of markets by the governments.
 - Companies such as Airtel, Jet Airways in India and South West, E-bay and others in USA
- The opening up of markets has enabled these new entrants to succeed through innovation either in terms of processes or products or new business models or through convergence with IT or logistics.

Conclusion

- We have outlined all possible innovations in the ecosystem framework
- Given a company, It is instructive to map its ecosystem, list all innovations possible in the ecosystem elements and then consider co evolution in the ecosystem & convergence of technologies for creating a block buster industry.
- Food security in emerging markets, Affordable housing, skill training from education to employment (E2E) are some of the vital issues that need solutions using STERM framework.