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Strategic Corporate Advisory Services

Creating Corporate Integral Value (CIV)

Leg 6. Value Chain Analysis
Annex: COST DRIVERS

Cartoon Source: Seppo.net/

Leg 6. From Hong Kong to Auckland.

OUTLINE Leg 6. Value Chain Analysis

01 ***Key Concepts Value Chain Analysis***

02 ***Value Chain Methodology Approach***

03 ***Who Uses Value Chain Analysis?***

04 ***Advantages and Disadvantages Value Chain***

05 ***Innovating through Value Chain Analysis***

06 ***Summary and Conclusions***

Leg 6. From Hong Kong to Auckland.

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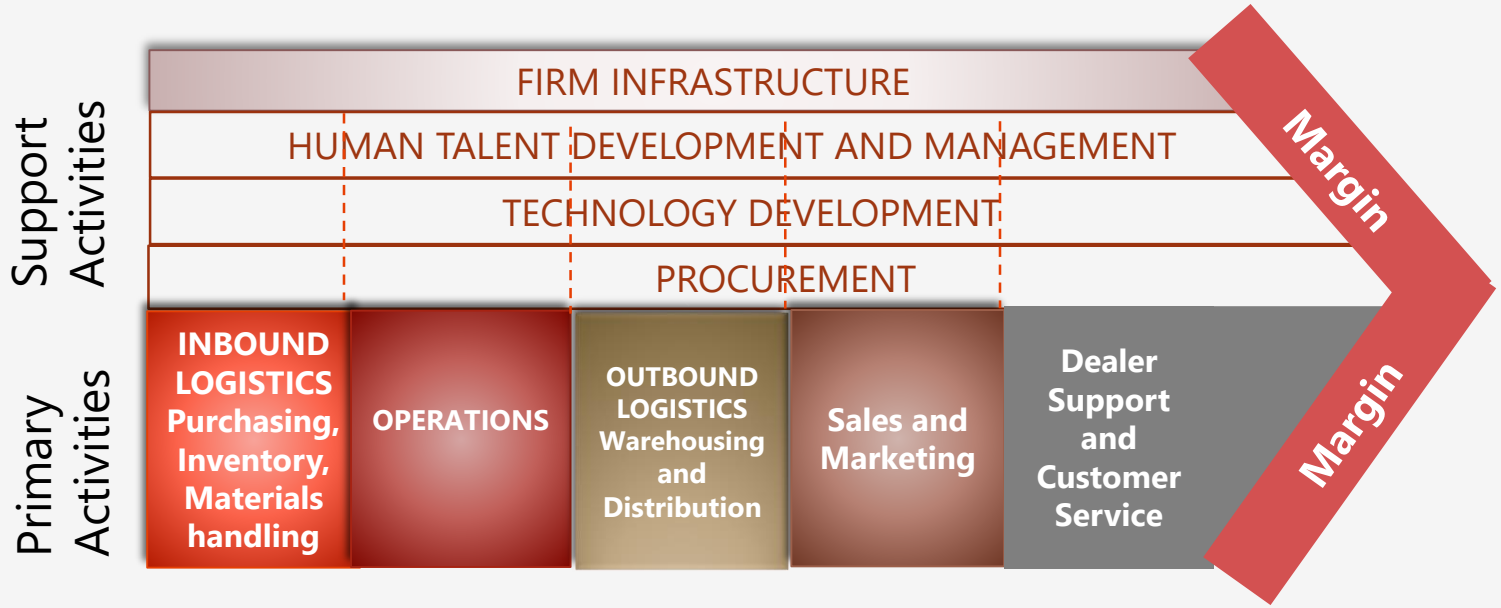
Leg 4. From Melbourne to Hong Kong.

02
Value Chain Methodology Approach

We are here!

Cost Drivers

Let´s start to understand the 10 major cost drivers that help us to determine cost behavior of value activities using the VCA.



Generic Value Chain.

Leg 6. From Hong Kong to Auckland.

Cost Drivers

02
Value Chain Methodology Approach

Diagnosing the cost drivers of each value activity allows a firm to gain a sophisticated understanding of the sources of its relative cost position and how it might be changed.

We are here!

Value Chain Analysis as a tool for Competitive Advantage

Maximize Profit

PROFIT = Price - Cost

For the Firm, we focus on cost drivers

1. Cost Analysis and Performance Improvement

2. Competitive Differentiation Analysis

Maximize Value

VALUE = Utility - Price

For the Customer, we focus in utility drivers

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02
Value Chain Methodology Approach

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Cost Drivers

Cost Drivers are the structural causes of the cost of an activity at the value chain. These Cost Drivers can be more or less under a firm´s control.

Main Cost Drivers (10)

- *Economies of Scale*
- *Experience (Learning and Spillovers)*
- *Patterns of Capacity Utilization*
- *Linkages*
- *Interrelationships*
- *Integration*
- *Timing*
- *Location*
- *Institutional and Regulatory Factors*
- *Discretionary policies independent of other Drivers.*

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Cost Drivers

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Value Chain Methodology Approach

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1. Economies of Scale

- Economies of scale arise from the ability to perform activities differently and more efficiently at larger volume or from the ability to amortize the cost of intangibles such as advertising and R&D over a greater sales volume.
- Do not confuse **Economies of scale** with **increasing capacity utilization.**
  Increasing capacity utilization spreads the fixed costs of existing facilities and personnel over large volume, while economies of scale imply that an activity operating at full capacity is more efficient at a larger scale.
- Increasing complexity and costs of coordination can lead to diseconomies of scale in a value activity as scale increases.
- Some value activities are more scale sensitive than others. Value activities such as product development, national advertising and firm infrastructure are more scale-sensitive than activities such as procurement and sales force operations because their costs are heavily fixed no matter what the firm scale is.

Diseconomies of Scale occur in a value activity as scale increases:

Increasing complexity in factories can:
- Dampen employee motivation
- Increase wages
- Increase purchased input costs

In Procurement, increasing larger requirements may:
- Meet an inelastic supply forcing up input prices

In fashion and professional services industries, costs can increase if
- Increase in larger requirements diminishes the fast responses and the capacity of creative individuals who do not function well in large organizations.

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Cost Drivers

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Value Chain Methodology Approach

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1. Economies of Scale

- Economies of scale are not all equivalent
- The relevant measure of scale differs among value activities and industries
- For some value activities: global or worldwide scale is the relevant cost driver.
- For other value activities: national scale, regional scale, local scale, plant scale, project scale, scale per production line, scale per buyer, scale per order or some other measure of scale may underlie the behavior of cost.
- Examples:
  - In Value Activity Research and Development.
  - In Value Activity of Outbound Logistics-the cost of Transportation

In Transportation:

- Economies of scale hinge on regional or local scale or on a scale per buyer.
- Economies of scale depend on the mode of transportation employed (sea, air, land).
- Transportation suppliers have cost policies by container load, carload or trainload shipments to a given area (local or regional).
- The distances between the firm and the density of buyers affects the cost.
- Many times the cost of delivery is fixed regardless of the buyer´s order size.

In R&D, global or national scale are relevant when measuring the scale.

- Development costs of a worldwide model is sensitive to global scale.
- Development costs for individual countries are more sensitive to national scale.

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Cost Drivers

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Value Chain Methodology Approach

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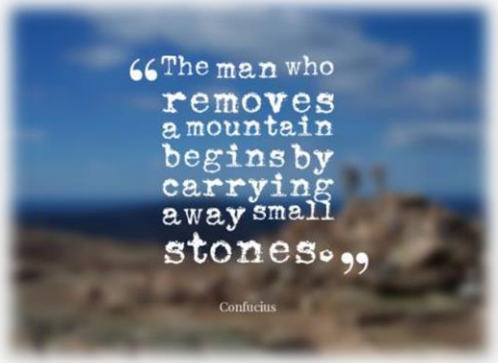
2. Experience: Learning and Spillovers

- The Cost of a value activity can decline over time due to learning, that increases its efficiency.
- Learning can lower costs over time:
  - Layout changes
  - Improved scheduling
  - Labor efficiency improvement
  - Product design modifications
  - Yield improvements
  - Procedures that increase the utilization of assets
  - Better tailoring of raw materials to the process
- The rate of learning varies widely among value activities because each offers differing possibilities for learning improvements.



- Learning is an accumulation of small learning improvements
  - The best sailing teams have been training for years, and preparing themselves in different oceans and scenarios.
- The rate of learning may increase during slack periods when attention is focused on reducing costs rather than meeting demands.
- Learning tends to vary with the amount of management attention devoted to capturing it.
- Learning can spill over from one firm to an industry through different stakeholders such as suppliers, consultants, ex-employees, etc…

Cost Drivers

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2. Experience: Learning and Spillovers

- How to measure the rate of learning in each of the value activities?
- If the costs diminish over time in a value activity, that means we are learning.
- In a value activity where learning affects cost behavior this may happen because:
  - Improving worker efficiency triggers higher production rates (more volume produced)
  - Introduction of more efficient and modern machinery
  - Level of investment expended in modifications to an activity

Typical Measures of Learning	*Where do they happen?*
Cumulative volume in the activity	*Typical for determining machine speed or reject rates in fabrication operations*
Time in operation	*Typical for work-flow layout in assembly*
Cumulative Investment	*Typical for plant efficiency*
Cumulative industry volume	*Typical for product design improvements that lower cost where spillovers are high*
Exogenous technical changes	*Typical for basic process improvements*

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Cost Drivers

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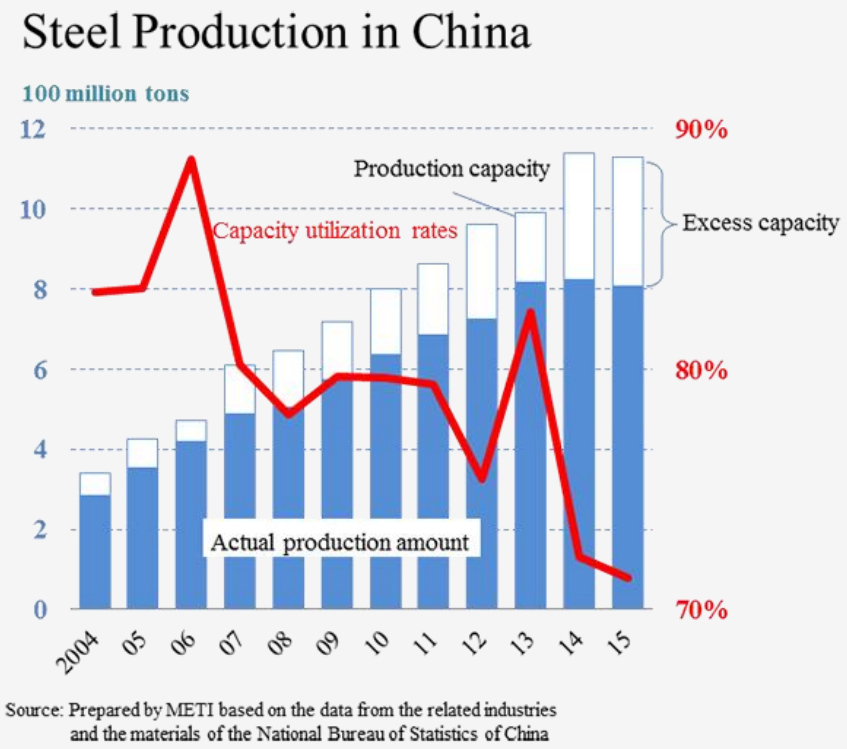
3. Patterns of Capacity Utilization

- The cost of a value activity is affected where this has a substantial fixed costs associated with it.
- Fixed costs create a penalty for underutilization. The ratio of Fixed Costs to Variable Costs indicate the sensitivity of a value activity to utilization.
- Capacity Utilization is a function of demand or supply fluctuations: either seasonal or cyclical.
- A firm with a constant capacity utilization will have lower costs than one that changes its utilization (expanding or contracting).
- Example: Steel Production in China.



Source: Prepared by METI based on the data from the related industries and the materials of the National Bureau of Statistics of China

Capacity Utilization (%)= (Actual Output/Maximum Possible Output) x 100

Value Chain Methodology Approach

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Value Chain Methodology Approach

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4. Linkages

- When Value Activities in the Value Chain are linked, if we change the way one of them is performed, this can reduce the total cost of both.
- It can happen if you raise the cost of one value activity, this may not only lower the cost of another activity but also lower total costs.
- Linkages lead to opportunities for cost reduction through two mechanisms: Coordination and Optimization.
- Examples:
  - Good coordination of procurement and assembly can reduce the inventory costs
  - Optimizing activities that are linked together, can resolve tradeoffs among them.

Vertical Linkages

When a value activity is linked to the value chain of external parties

- The Value Chain of suppliers
- The Value Chain of Distribution Channels

Linkages within the Value Chain

- Linkages between direct and indirect activities (example machining and maintenance
- Linkages between quality assurance and other after sales services
- Linkages between activities that must be coordinated: inbound logistics and operations
- Linkages between activities that are alternative ways of achieving the same result.

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Cost Drivers

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Value Chain Methodology Approach

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5. Interrelationships

- The most important form of interrelationship is when a value activity can be shared with a sister unit.
- Examples:
  - Sharing Order processing across many business units
  - Sharing marketing and distribution in financial services business units
  - Sharing know how between separate but similar value activities
- By sharing costs between different separate value activities, improves efficiency of the activity and reduces costs.

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Cost Drivers

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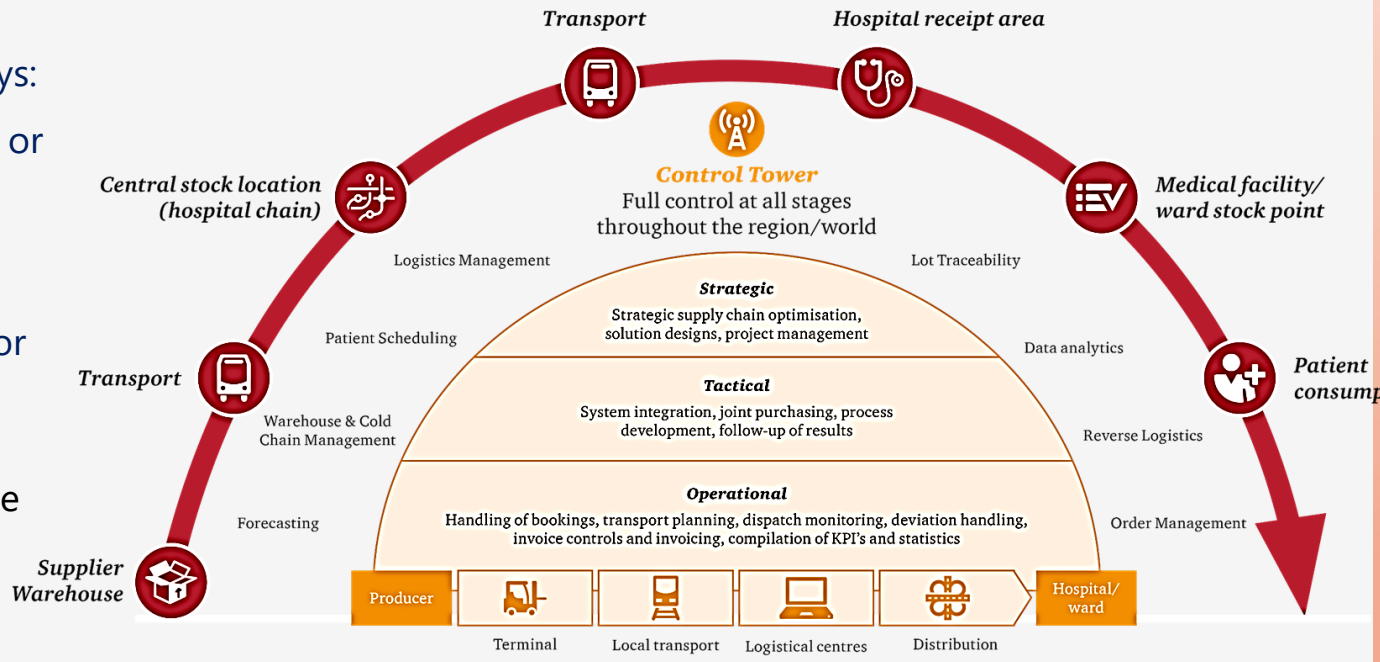
6. Integration

- The level of vertical integration in a value activity may influence its cost.
- Integration can reduce cost in number of ways:
  - It avoids the costs of using outsourcing or contracting other companies for procurement and transportation, for example.
  - It can allow the firm to avoid suppliers or buyers with considerable bargaining power
- But a wrong method of integration can raise costs by creating inflexibility, bringing activities in house that others can perform cheaply, etc. In this case, de-integration is indicated.
- A firm must analyze the potential benefit of integration for each important purchased input in a value activity.



Example of Vertical Integration in Hospitals: Through a Control tower.
Source: PWC

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Cost Drivers

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7. Timing

- The cost of a value activity often reflects timing.
- If our company is a first-mover, it can reflect lower costs in value activities such as marketing and branding, because there is no competition.
- But First-Movers can also experience disadvantages in comparison to Late Movers.
- Late Movers can enjoy benefits such as:
  - Purchasing the latest equipment,
  - Avoiding high research ad development costs.
  - Less fixed costs
  - Learn from experiences of the first movers (tailor made their value chain to prevailing factor costs).

McKinsey Global Institute estimates that remote monitoring could reduce the cost of treating chronic diseases in health systems by 10 to 20 percent by 2025.

Example: In Health Areas, Late Movers of adopting new technologies in Latin America, decrease the costs of the value activity Research and Development compared with First Movers entities in developed countries.

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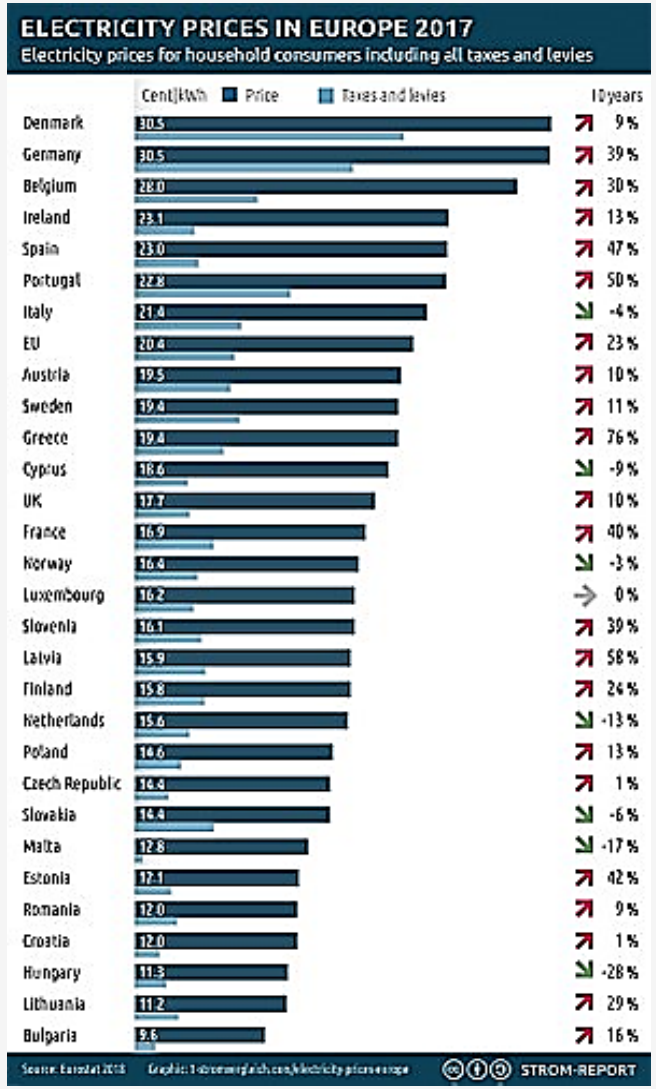
Cost Drivers

8. Location

- The geographic location of a value activity can affect its cost.
- The location of a value activity affects cost in a number of ways:
  - Costs of labor
  - Cost of management
  - Scientific personnel
  - Raw materials
  - Energy
  - Logistics- inbound and outbound.
  - Taxes
  - Climate, cultural norms and tastes can also affect product needs and amenities.



Example: Changing Location often involves tradeoffs while raising others. The cost of energy in Denmark is higher than other European countries.

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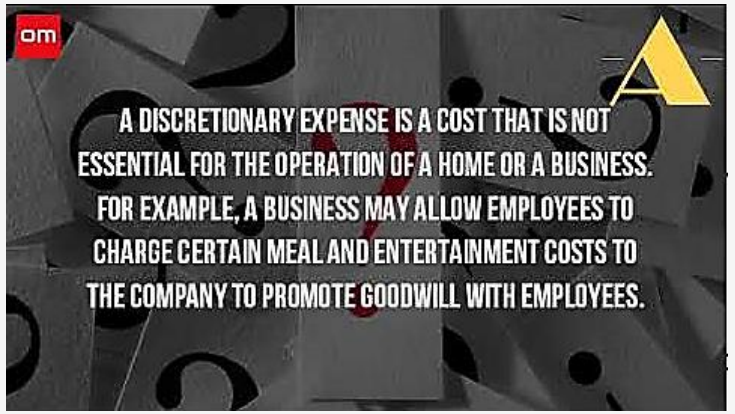
Cost Drivers

9. Discretionary Policies

- Discretionary policy choices reflect a firm´s strategy.
- Some of the policy choices that tend to have the greatest impact on costs include:
  - Product configuration, performance and features
  - Mix and variety of products offered
  - Level of service Provided
  - Spending rate on marketing and technology development activities
  - Delivery Time
  - Buyers Served



- Channels employed
- Process technology chosen, independent of scale
- Specifications of raw materials or purchased inputs
- Wages paid and amenities
- Human resources policies
- Procedures for operations.

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Cost Drivers

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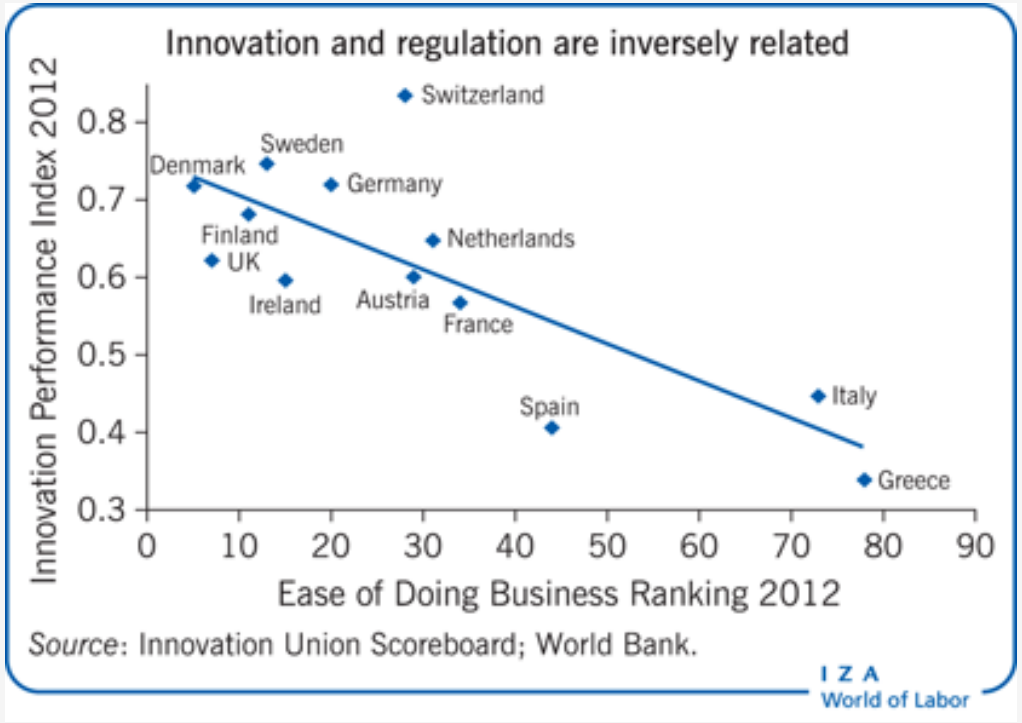
10. Institutional Factors

Institutional factors include:

- Government regulations
- Tax holidays
- Financial Incentives
- Unionization
- Tariffs and levies
- Local content rules
- Power costs depend on the rates charged by energy companies (affected by regulation)



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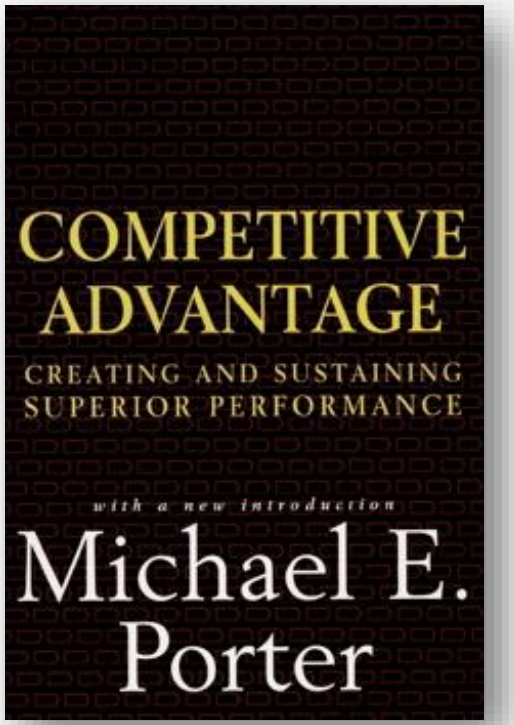

All the material shared today is from the book ***"Competitive Advantage, Creating and sustaining Superior Performance"***, From Michael Porter.

Thank you!