Introduction to agricultural value chains and supply chain management

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Introduction

- What the lectures cover: An introduction to the basics and state-of-the-art in value chain analysis (qualitative and quantitative)

- Overall objective: provide course participants with structured *frameworks* and *tools* to conduct value chain analysis and assess value chain issues

Course outline

- Introduction to agricultural value chains and supply chain management (about ½ day)
- Rapid value chain analysis techniques – qualitative approaches (1 ½ days)
- Overview and examples of SD models: theory and practice using iThink (1 ½ days)
- Group model building (1 ½ days)

Course structure

- Course is designed to be *interactive* and *participatory* – lots of discussion is encouraged.
- Exercises in plenary and small groups to help you apply some of the course themes
- Extensive reading list: designed as *reference* for you in your own research (we won't cover everything!)

Outline – Part I

- What is a value chain? An exercise and some definitions

- Historical background – Porter and value chains/systems

- Value chains and supply chain management

- Additional key concepts

What is a value chain??

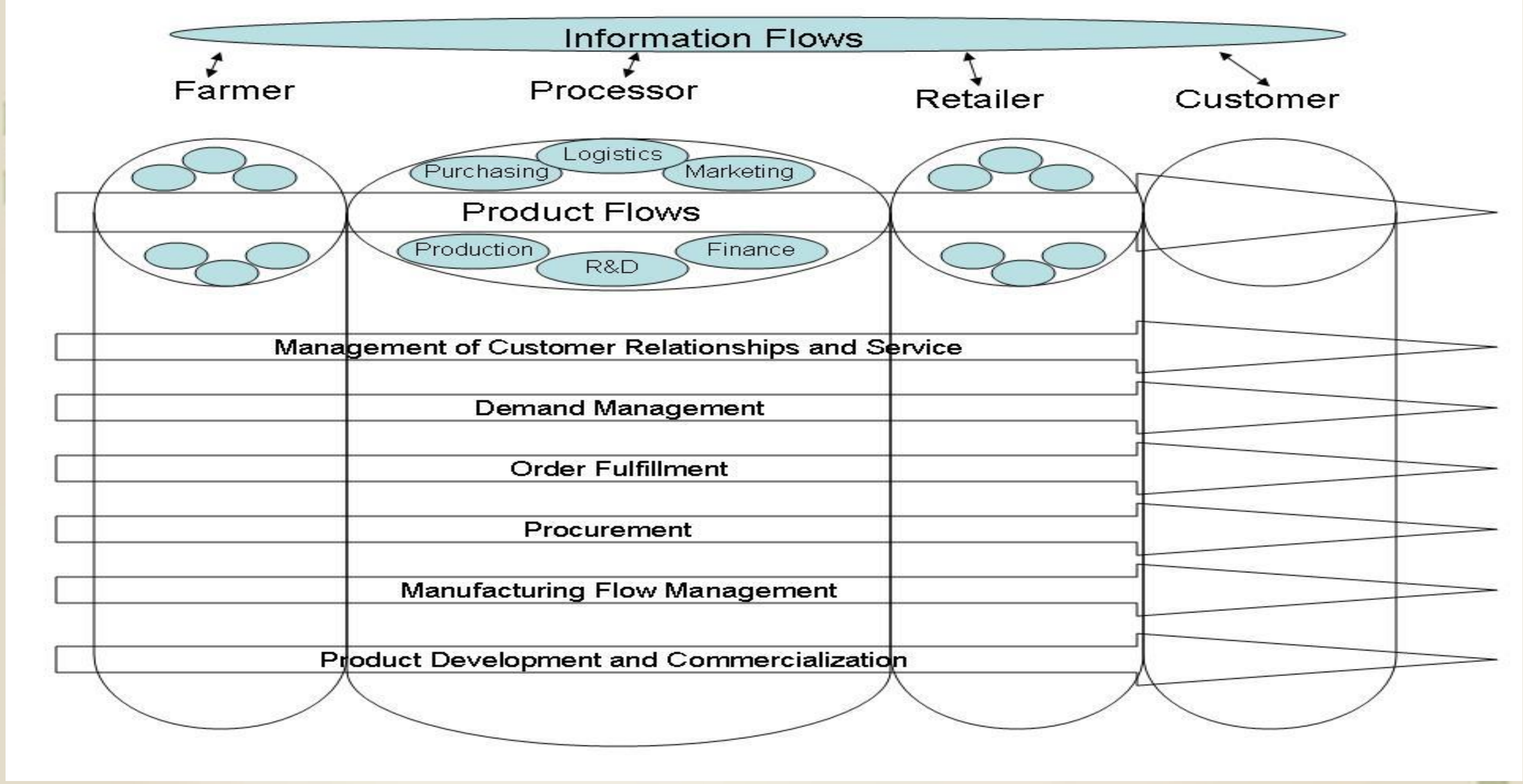
(Exercise 1: Plenary)

Is THIS a value chain?

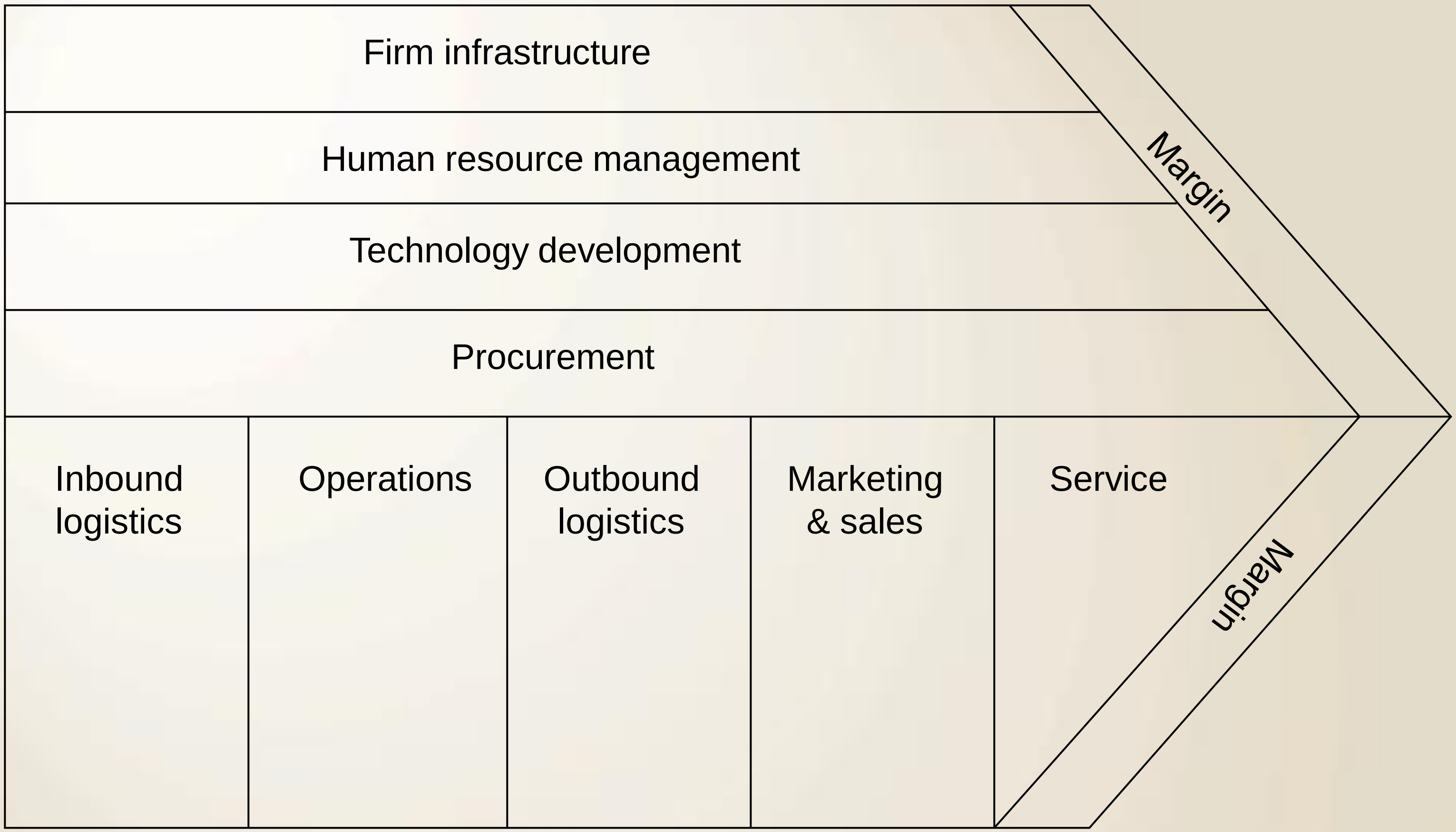
Producers → *Traders* → *Retailers* → *Consumers*

Why or why not?

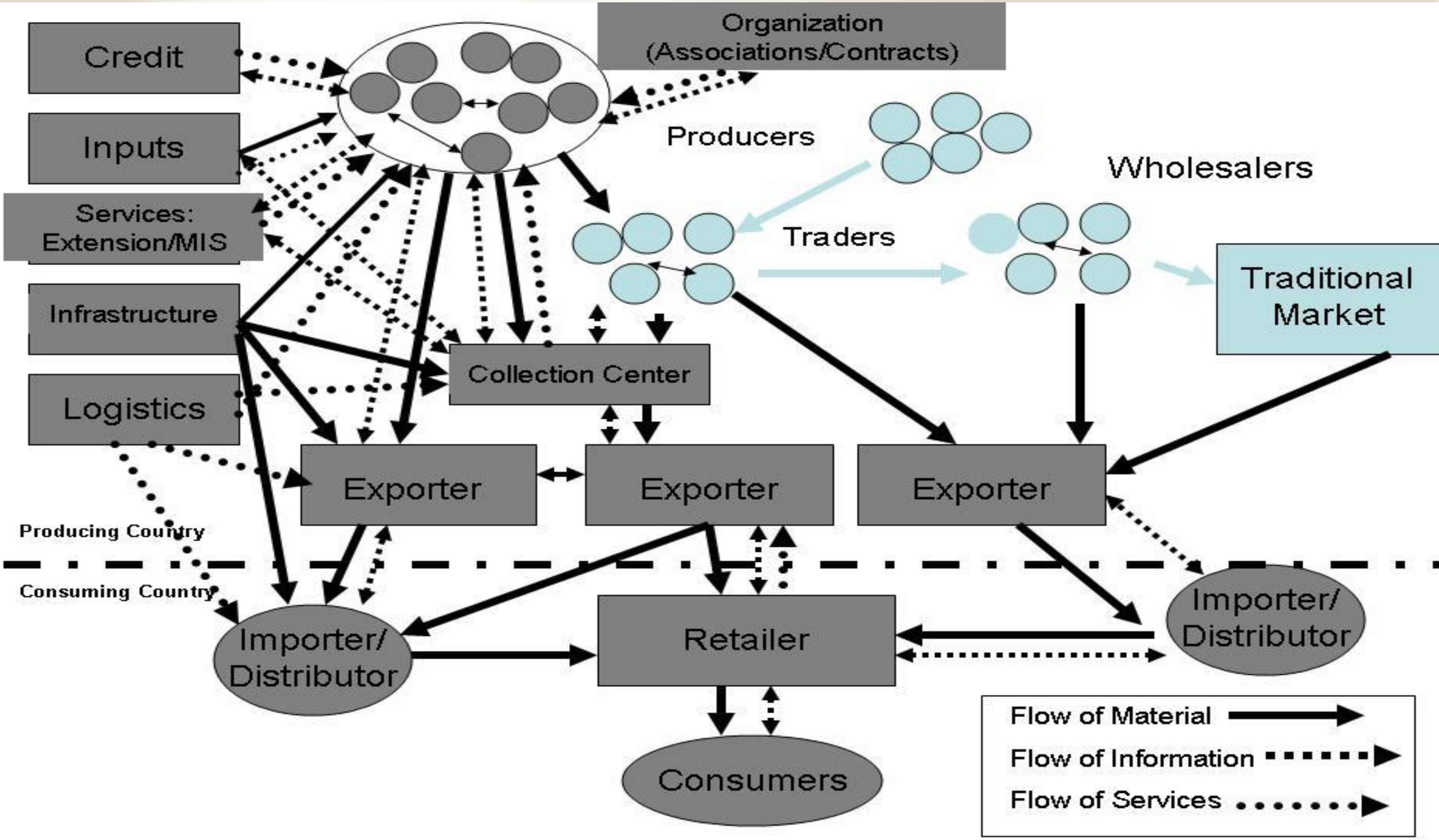
Or is THIS a value chain?



Or maybe THIS?



Or maybe THIS?



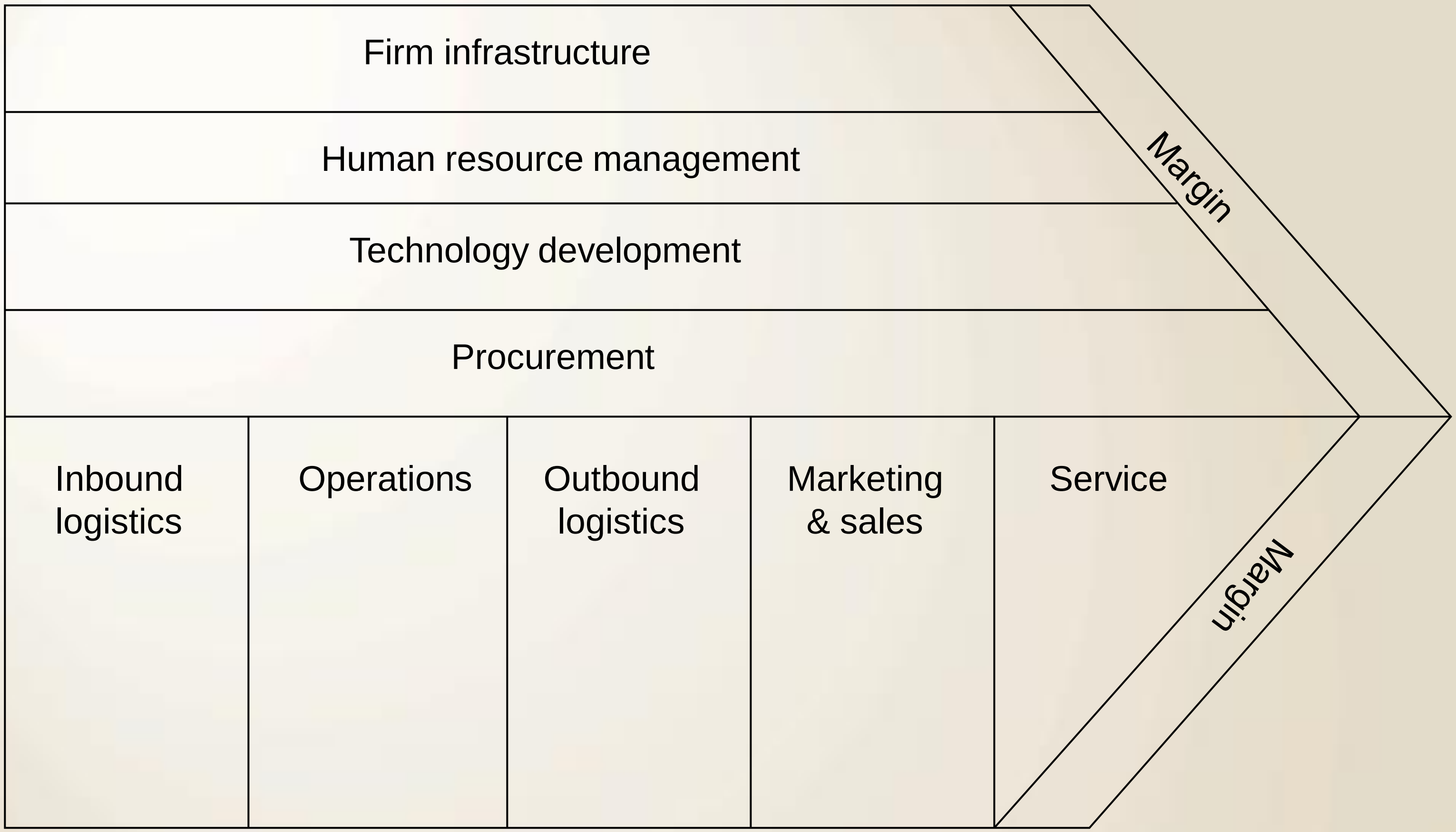
Or maybe even THIS?

Some preliminaries

- The concept of the value chain is derived from Porter (1980) in the analysis of competitive advantage for industrial firms.

- According to Porter, *"each firm is a collection of activities that are performed to design, produce, market, deliver, and support its product*." The "value chain" is thus a representation of these value activities, based on a firm's cost structure, and highlights potential areas of competitive advantage

Porter's value chain

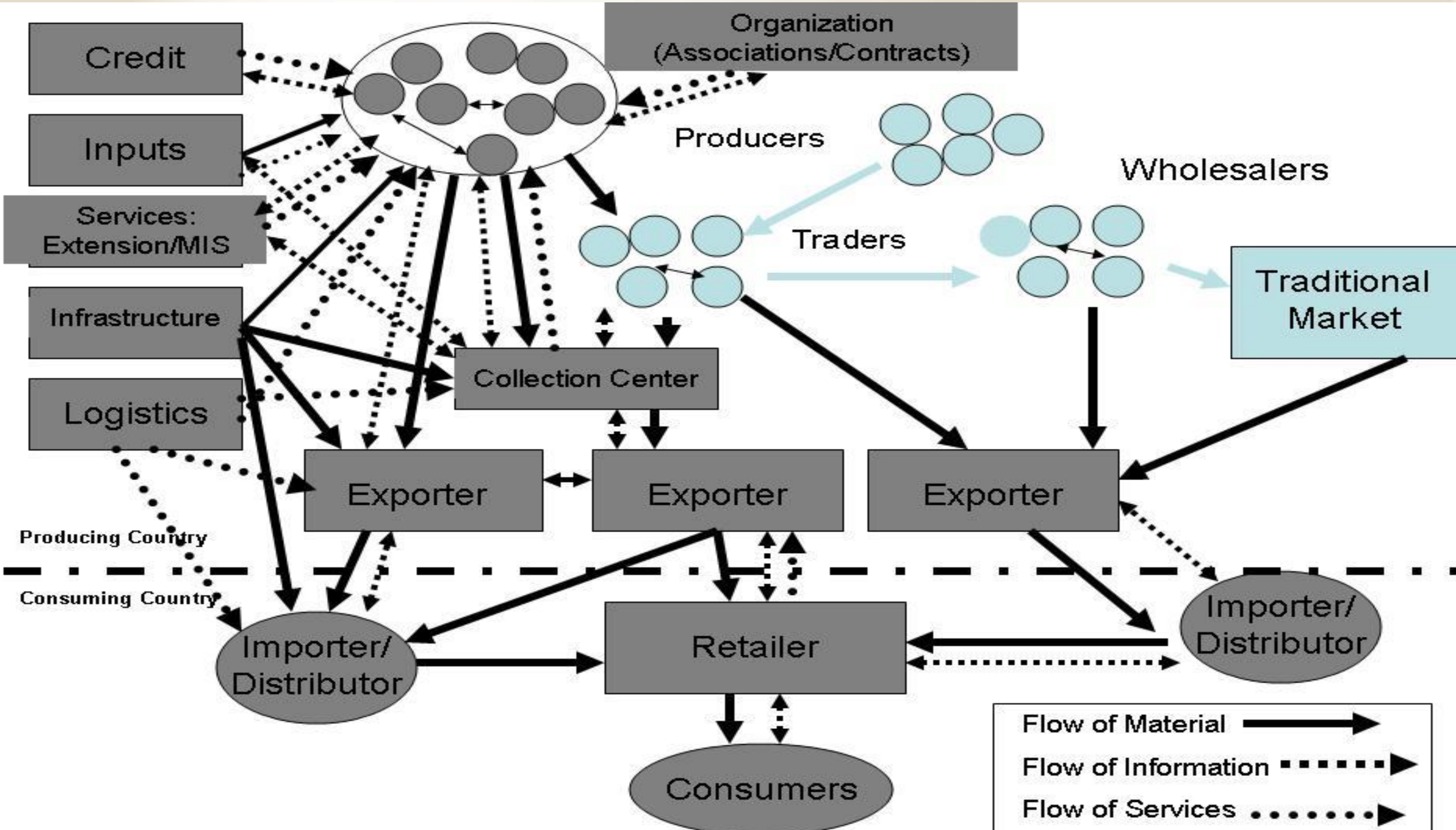


Another definition

- A *value chain* is "the full range of activities which are required to bring a product or service from conception, through the intermediary phases of production, delivery to final consumers, and final disposal after use." (Kaplinsky 2000:121)

- This definition often used in the development literature

Kaplinsky's value chain?



Recap

- Let's step back for a minute: we've given definition(s) of a value chain, but we haven't explained exactly *why* value chains might be important.

- To do this, let's go back to Porter (1980), something most (all?) in development have never read …

Porter’s *Competitive Advantage*

- Focus: structural analysis of industries – what are the determinants of firm *profitability?*

- Porter identifies five competitive forces:
  - Entry of new competitors
  - Threat of substitutes
  - Bargaining power of buyers
  - Bargaining power of suppliers
  - Rivalry in existing competition

Entry barriers
Economies of scale
Brand identity
Switching costs
Absolute cost advantages
Government Policy

New entrants

Threat of new entrants

Rivalry determinants
Industry growth
Product differences
Concentration & balance
Information complexity
Diversity of competitors

Suppliers

Bargaining power of suppliers

Industry competitors

Intensity of rivalry

Bargaining power of buyers

Buyers

Determinants of supplier power
Differentiation of inputs
Presence of substitutes
Supplier concentration
Relation of inputs to cost structure

Threat of substitutes

Determinants of buyer power
Bargaining leverage vs.
Price sensitivity

Substitutes

Determinants of substitution threat
Price performance of substitutes
Buyer propensity to substitute

Source: Porter (1980), figure 1-2

Porter's *Competitive Advantage*

- Industry profitability assumed to be a product of industry structure (the five forces in the figure)

- These forces influence prices, costs, and required investment; their relative influence will depend on the industry

- *Strategies* taken by firms can influence these five forces, changing and shaping the industry structure (and influence profitability)

Porter's *Competitive Advantage*

- How does a firm position itself within a given industry to sustain competitive advantage?

- Two basic types of competitive advantage
  - Low cost
  - Differentiation

- Within these types of competitive advantage lay three generic strategies: cost leadership, differentiation, and focus.

	LOWER COST	DIFFERENTIATION
BROAD TARGET	Cost leadership	Differentiation
NARROW TARGET	Cost focus	Differentiation focus

Source: Porter (1980), figure 1-3

Porter's *Competitive Advantage*

- Main idea: if a company is serious about gaining competitive advantage, it must make a choice about the *type* of competitive advantage it seeks and the *scope* within it will achieve it.

- "All-things-to-all people" not a good strategy

Porter’s *Competitive Advantage*

- Cost leadership: firm sets out to be *the* low-cost leader, finding and exploiting *all* sources of cost advantage

- Possible sources of cost advantage
  - Economies of scale
  - Proprietary technology
  - Preferential access to raw materials

Porter's *Competitive Advantage*

- Cost leadership does not imply ignoring differentiation – rather, a firm must be around where its competitors are in this dimension.

- Given prices at industry average, cost leadership will provide the firm with higher returns

- Cost leadership depends on being *the* cost leader, not one of many – first-mover and other activities crucial

Porter's *Competitive Advantage*

- Differentiation: firm tries to be unique along some product dimension or attribute

- Bases of differentiation can include:
  - Specific product attributes
  - Marketing approaches
  - Delivery systems

Porter's *Competitive Advantage*

- Key to a differentiation strategy is obtaining a price premium that is greater than the extra costs associated with differentiation.

- Differentiation strategies aim at cost structures near its competitors along non-differentiated dimensions

Porter's *Competitive Advantage*

- A third strategy is <u>focus</u>: firm targets a particular segment and tailors products towards them
- Idea is to obtain competitive advantage in its target segment, not overall.
- Such competitive advantage can be along cost or differentiation lines

Porter's *Competitive Advantage*

- Can firms achieve both cost leadership and differentiation?
- Generally not – great risks that firms will be "stuck in the middle"
- Exceptions
  - Competitors themselves are "stuck in the middle"
  - Cost is heavily dependent on market share
  - Technological innovation

Porter's *Competitive Advantage*

- Sustainability of generic strategies can be influenced by:
  - Industry evolution
  - Organizational structure and culture (we'll see this later when we discuss Christensen)
  - Strategic planning process

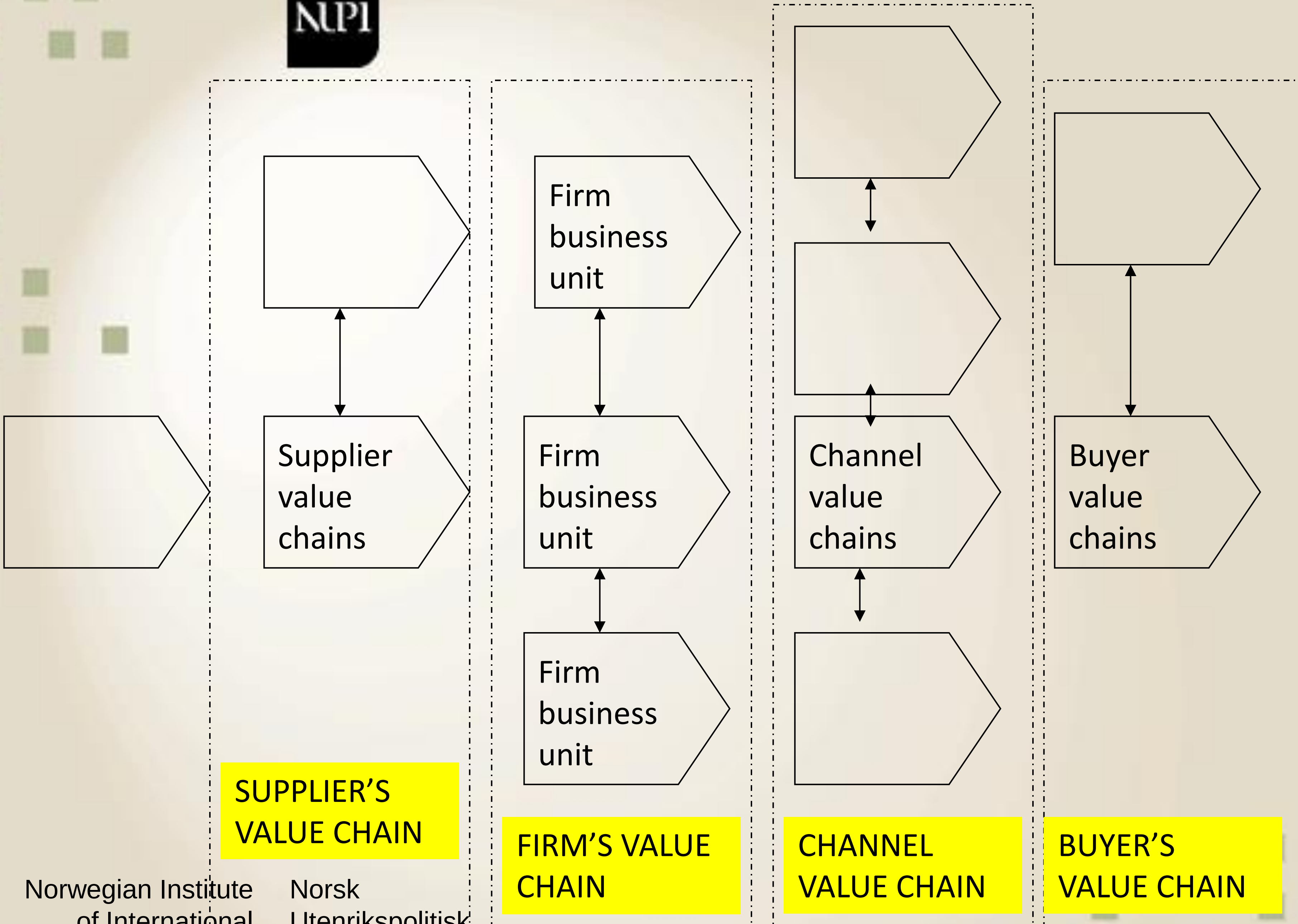
Porter’s *Competitive Advantage*

- Great, you think to yourself - so how does this relate to the value chain?

- Well, the value chain concept was developed to understand the *sources* within (and across) firm(s) to develop and sustain competitive advantage.

Porter's *Competitive Advantage*

- The idea behind Porter's value chain is to focus on the *activities* undertaken by a firm (and their interaction) to create value as sources of competitive advantage.
- Notice that the focus here is at the level of the *firm*: Porter notes sector-wise analysis may obscure sources of CA (p. 36)!
- The broader system of activities from raw materials to consumption is what Porter calls the *value system*

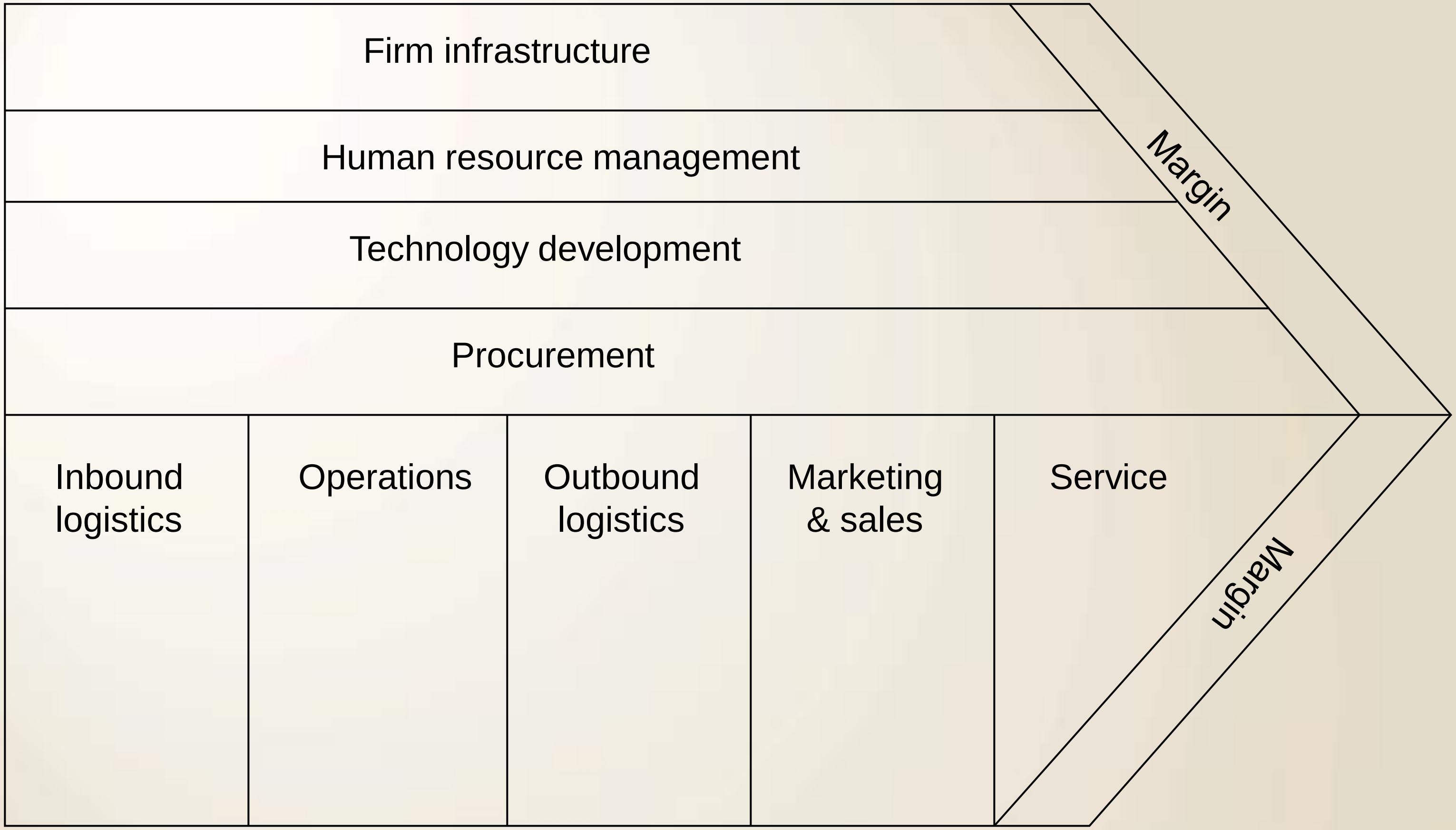

Supplier value chains
SUPPLIER'S VALUE CHAIN
Firm business unit
Firm business unit
Firm business unit
FIRM'S VALUE CHAIN
Channel value chains
CHANNEL VALUE CHAIN
Buyer value chains
BUYER'S VALUE CHAIN

Porter's *Competitive Advantage*

- What types of activities involved in the stages of product creation, distribution, management, and sale?
  - Logistics (inbound for raw materials, outbound for sales)
  - Operations
  - Marketing and sales
  - Service

- These primary activities are complemented by support activities related to infrastructure, HR, R&D, and procurement

Porter's value chain



Porter's *Competitive Advantage*

- Metric of analysis: value (total revenue), not cost.
- Value chains comprise of both value activities and margin

Porter's *Competitive Advantage*

- Note from earlier that a firm does not just have one value chain, but possibly many, interlinked with other value activities

- These linkages can be a source of competitive advantage through

Supply chain management

- So where does supply chain management fit in to this?

- First, some definitions…

Supply chain management

- A supply chain represents the *full range* of activities involved in the production of a commodity (production, procurement, finance, R&D, logistics, and marketing) and processes that integrate chain participants (extension, information services, certification, organization)

- Modern supply chains involve the flows of material, services, and information among chain participants.

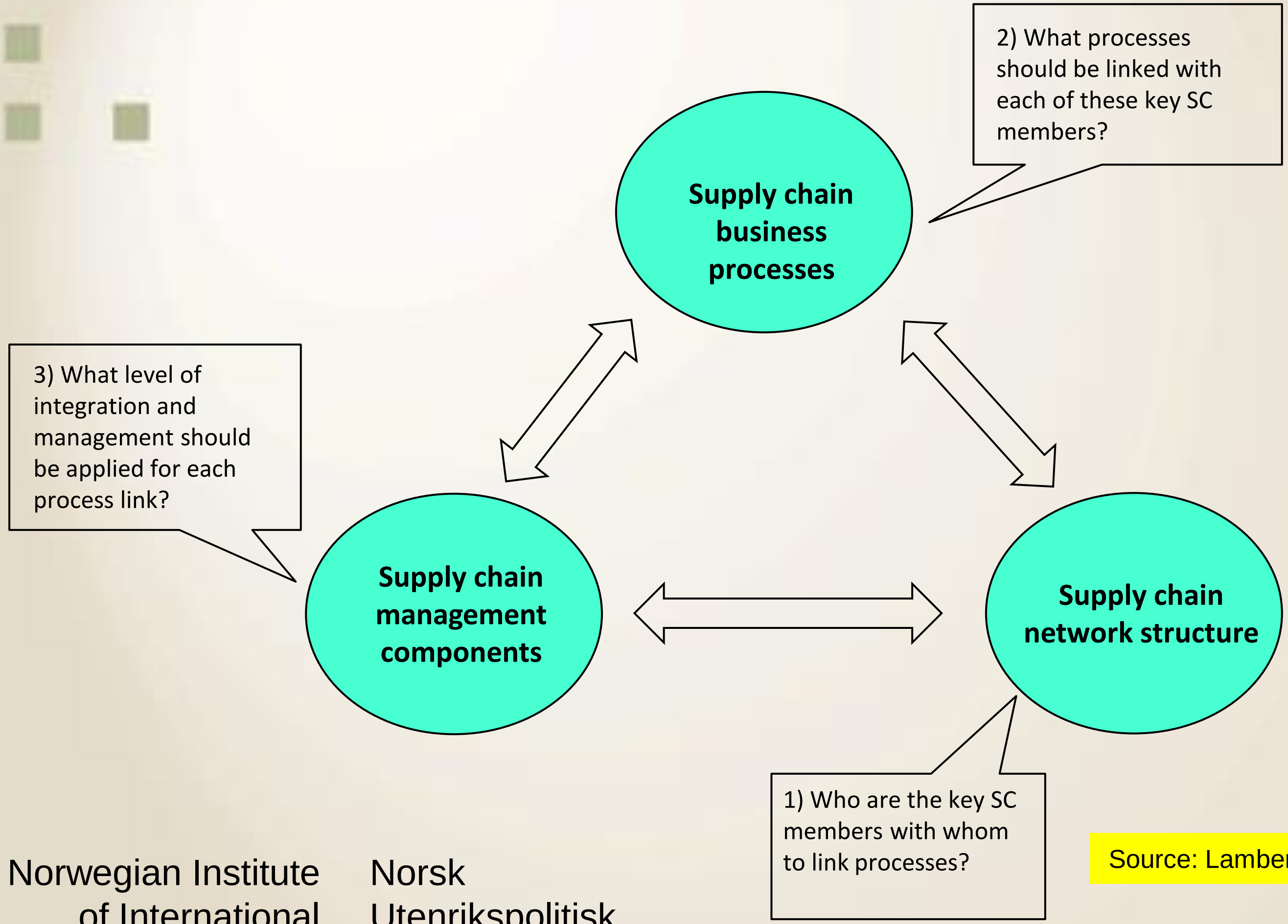
Supply chain management

- *Flows* of resources and information between diverse groups within the chain over time.
- *Feedbacks* between supply chain actors that can affect the performance of the supply chain: an intervention at one link can have upstream and downstream impacts!
- We'll see how these concepts apply later.

Supply chain management

- The objective in supply chain management is managing the flows between and among stages within the supply chain to maximize supply chain profit.
- It is more than logistics! It requires the integration of business processes from raw materials to final consumer to add value to a product or service.

Supply chain management

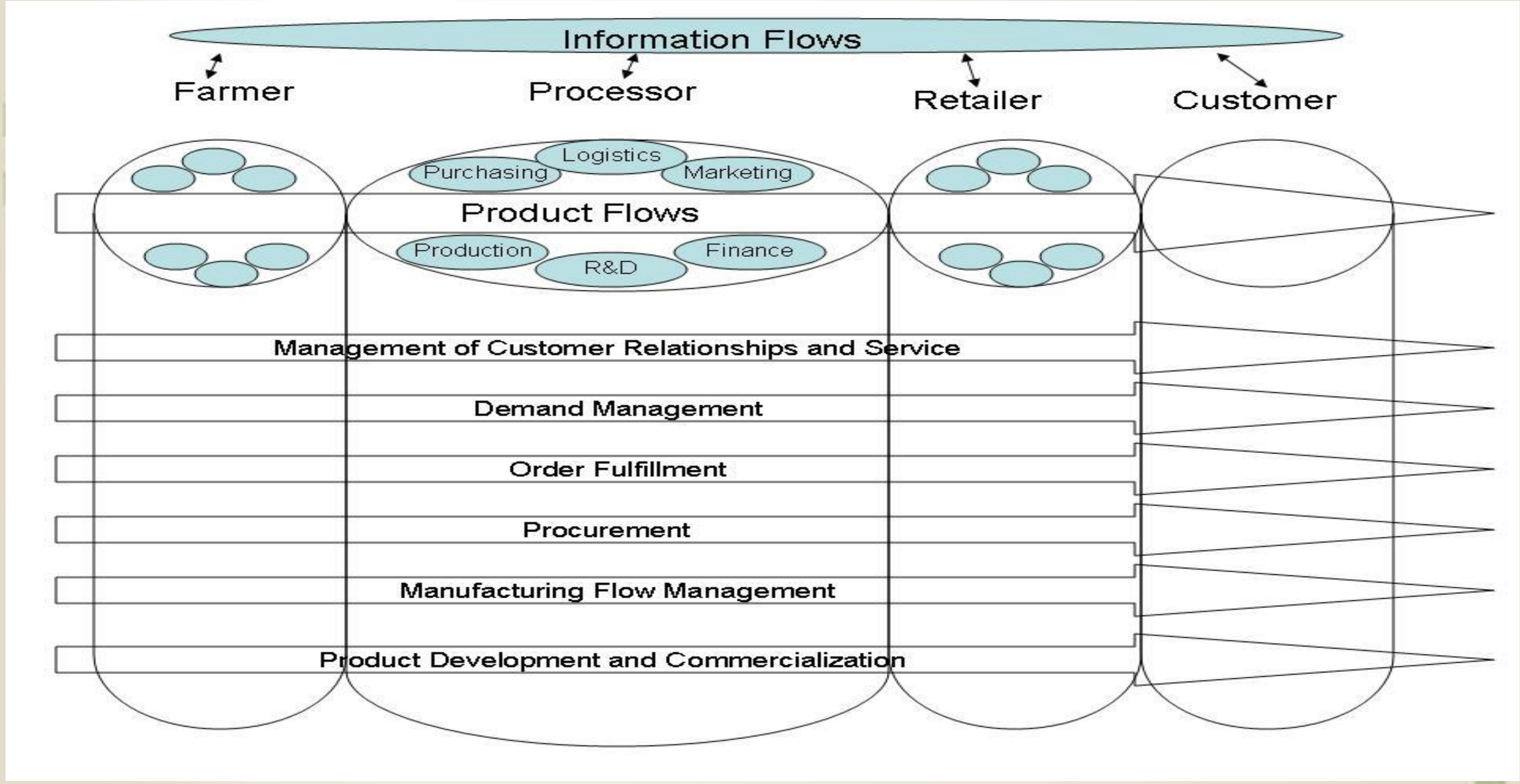


Source: Lambert and Cooper (2000): 70

Supply chain management

Strategy	Efficient supply chains (supply at lowest cost)	Responsive supply chains (respond quickly to demand)
Product design	Maximize performance at lowest product cost	Modularity so as to postpone differentiation
Pricing	Lower margins	Higher margins
Manufacturing	Lower costs via utilization of capacity	Capacity flexibility
Inventory	Low inventory	Buffer inventories
Lead time	Reduce, but not at expense of costs	Reduce even if costs high
Supplier	Based on quality & price	Based on speed, flexibility, reliability, quality

Supply chain management



Source: Lambert and Cooper (2000): 67

Back to value chain analysis

- Where does value chain analysis (VCA), as we know it in development, fit into this?

- One view: VCA is a badly-named way of bridging the gap between Porter's value chain and SCM, applied in a development concept.

- A more positive view: VCA provides development practitioners with a *systems approach* to understanding marketing systems, in a similar way SCM provides businesses with means to manage the SC
  - VCA and SCM are really *NOT* that different but complementary.

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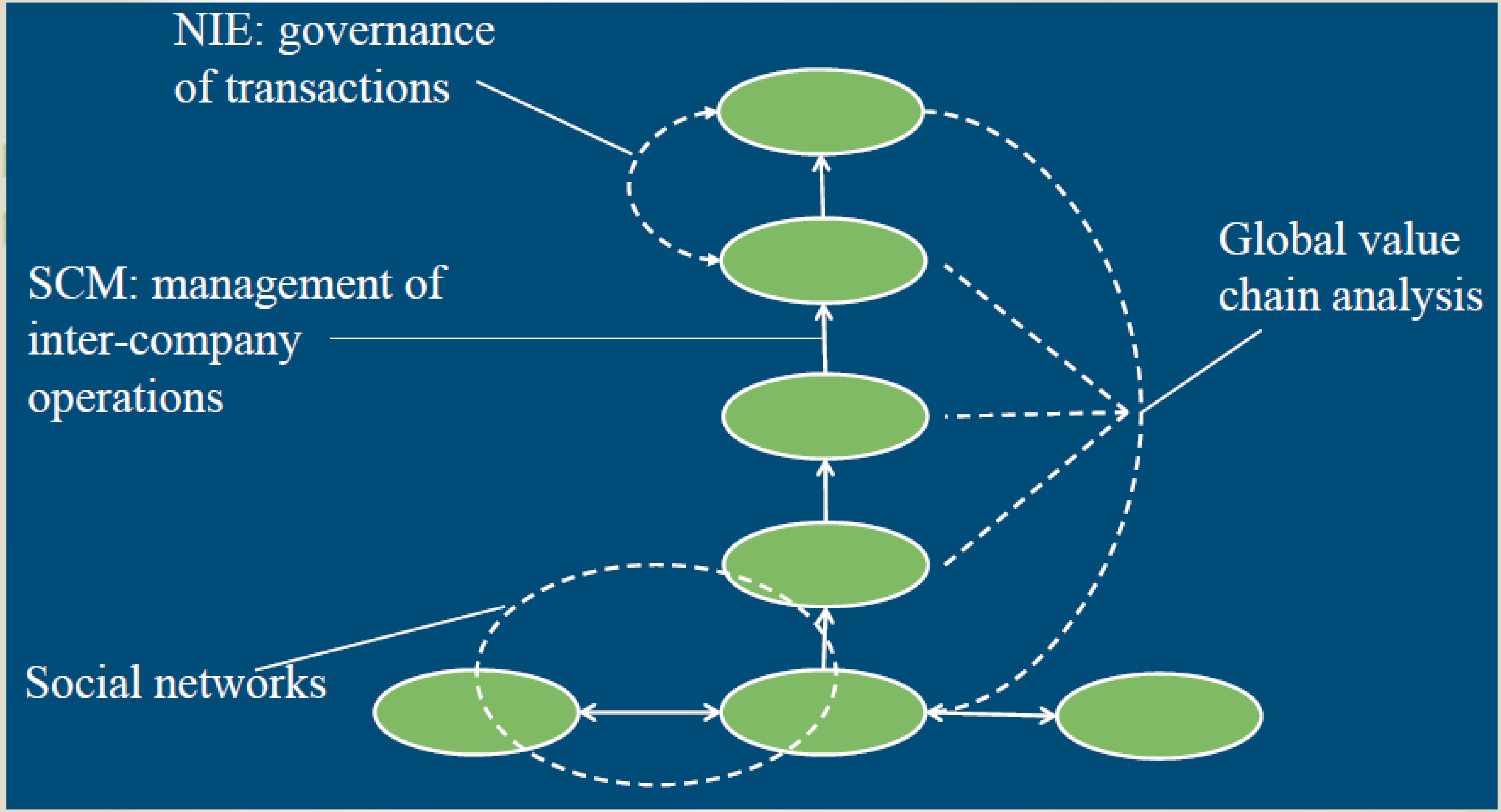


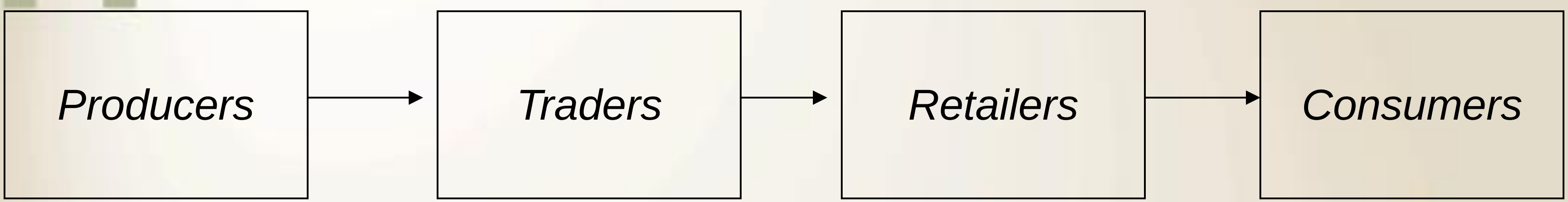
Source: Trienekens (2011)

Back to value chain analysis

- The origins of VCA go back to the 1970s – in the French agro-economic literature, there is sizable work on what are known as *filieres*.

- A *filiere* mainly looks stages of value generation, from production to consumption, typically looking statically at the chain for what it is.

A *filiere*



Back to value chain analysis

- Modern VCA dates back to work by Gary Gereffi in the 1990s, applying elements of dependency theory to *filiere* concepts.
- Gereffi's interests were in the process of globalization and whether developing countries would benefit; a series of case studies arose from IDS in the late-1990s
- Of particular interest to Gereffi and colleagues is the concept of *governance*.

Value chain governance

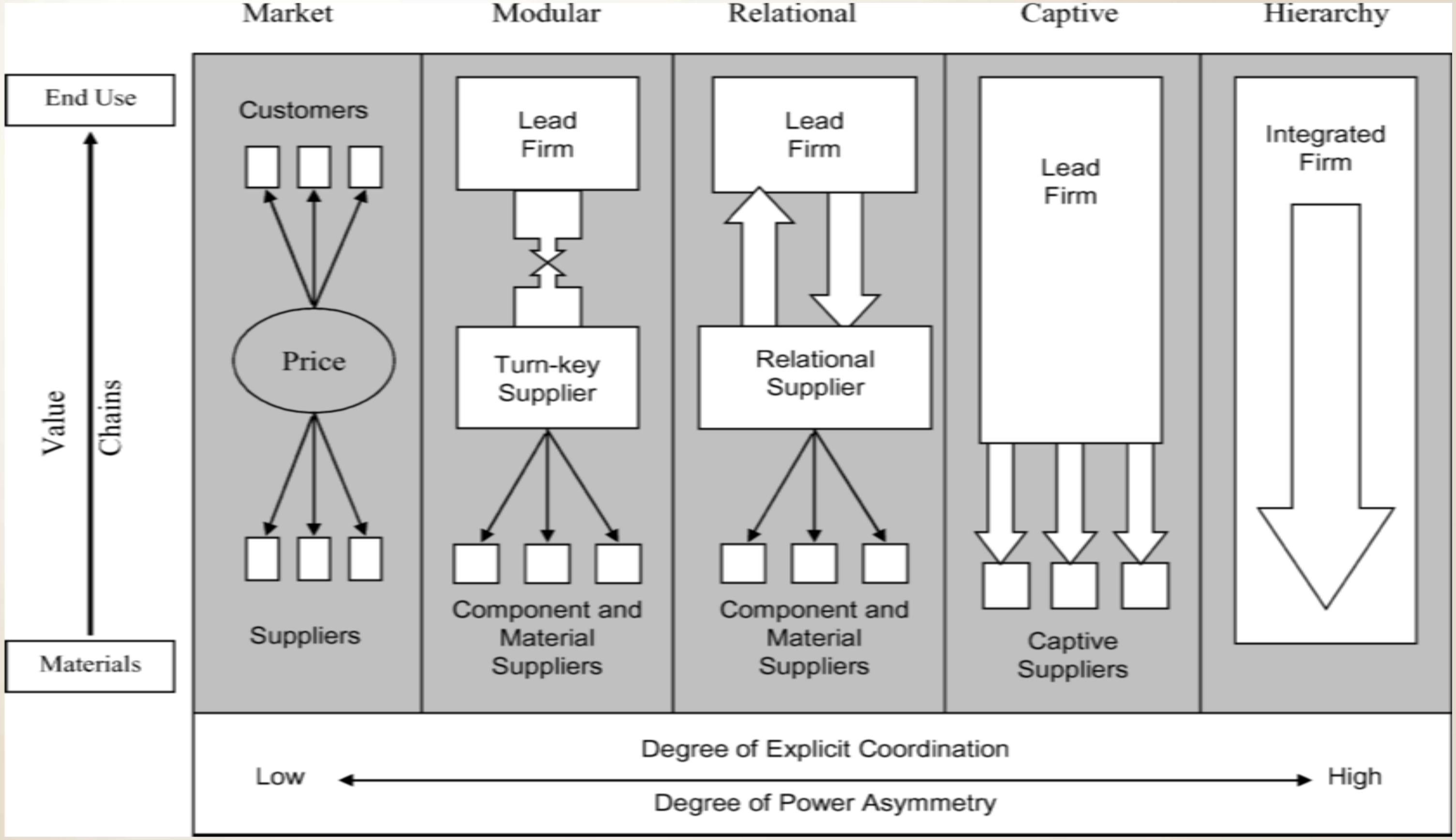
- What is governance? Governance identifies who and what coordinates transactions in the chain.

- Elements of governance include:
  - Who decides what is produced (buyer vs. producer chains)
  - How the rules of trade are determined
  - The nature of relationships between the participants
  - Coordination mechanisms (contracts, market sales, etc)
  - The extent of chain "power," based on the relative size of a particular actor, share of chain profits, or control over a key technology
  - The institutions and conventions behind such mechanisms

Value chain governance

- Gereffi et al. (2005) classify governance along a hierarchy:
  - Market-based
  - Modular
  - Relational
  - Captive
  - Hierarchy
- Riisgaard et al. (2008) refine this somewhat, distinguishing between market, contractualization (horizontal or vertical), and vertical integration

Structures of governance



Source: Gereffi et al (2005):89

Structures of governance

Governance type	Complexity of transactions	Ability to codify transactions	Capabilities in the supply base
Market	Low	High	High *
Modular	High	High	High
Relational	High	Low	High
Captive	High	High	Low
Hierarchy	High	Low	Low

Source: Gereffi et al (2005):90

	Market	<- - - - - -	- - - - ->	Hierarchy
Price	Spot price	Reference market price	Fixed forward price	Internal price
Volume	Spot volume	Fixed volume with min./max. deviations	Fixed volume	Internal volume
Quality	Spot market specifications (public)	Third party quality coordination	Counterparty quality coordination	Internal quality coordination
Investment (source)	Capital markets	Third-party to transaction	Party to the transaction	Internal capital allocation
Investment (type)	No (external) investments required	Debt ((non-)monitory risk/return)	Hybrid (conditional (non-)monetary risk/return)	Equity

Source: Wever et al. (2011)

Value chain governance

- Why does governance matter?
  - Governance provides *context* to the chain: chains are entities with actors, each with their own constraints and value systems that influence chain operation and performance
  - Governance points out where some of the institutional bottlenecks and constraints are within the chain
  - Governance influences strategies for upgrading, and why (or why not) there is uptake.
  - Governance provides insights on power relationships, and possible winners and losers from VC participation

Value chain analysis: taking stock

- Where are we today with value chain analysis?
  - Different (but similar) methods and toolkits exist, but are often not used or well understood – this course will remedy this!
  - Artificial distinctions made between VC's and SC's, but much can be learned in VCA from SCM and strategy principles (e.g., performance measures)
  - There is still need to inject quantitative rigor in VCA