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Томский политехнический университет

Курс “Логистика”

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Основное из Лекции 1

- Определение логистики
- Этапы развития логистики
- Логистический материальный поток
- Логистические операции
- Логистические системы
- Управление цепочкой поставок (SCM)
- Влияние глобализации на SCM
- Ценность/доб.стоимость в логистике

Лекция 2.
Методология в логистике.
Закупочная логистика.

Методологический аппарат ЛОГИСТИКИ

- Методы системного анализа
- Методы теории исследований операций
- Кибернетический подход
- Прогностика
- Методы моделирования

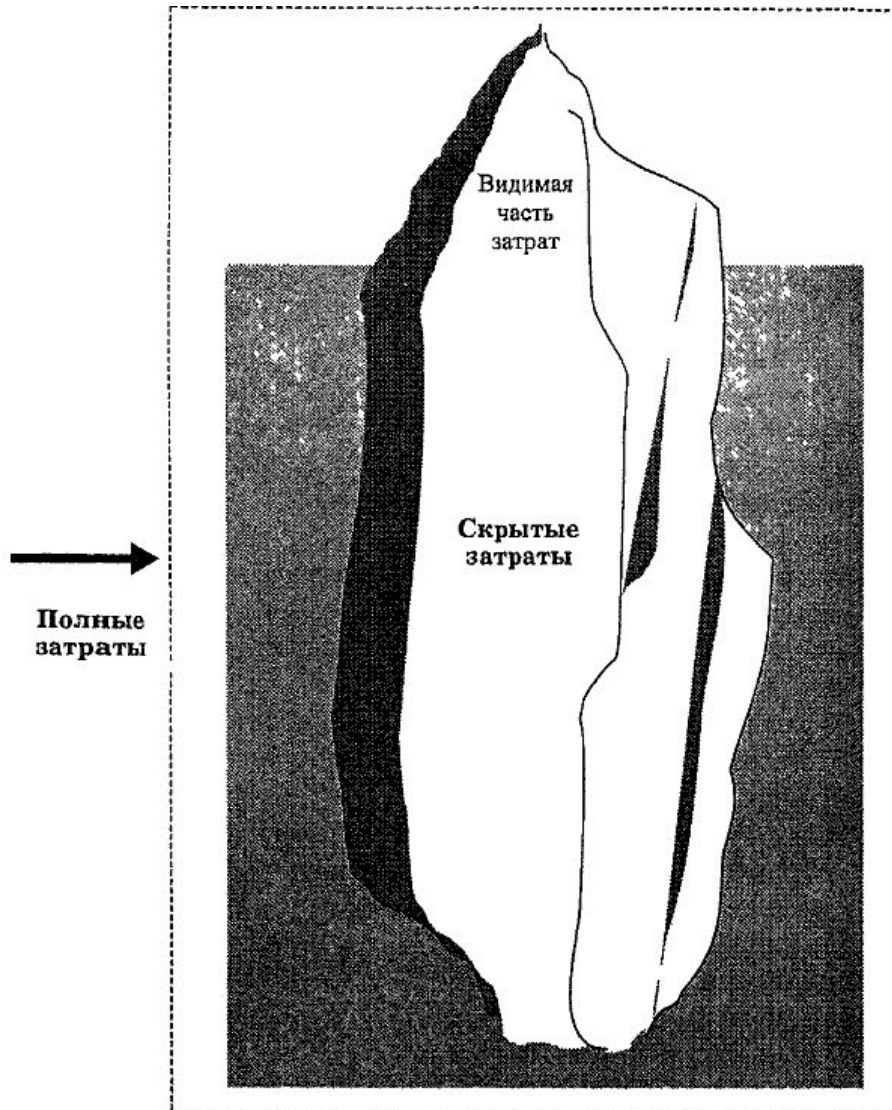
Цель:

- Прогнозировать материальные потоки
- Создавать интегрированные системы управления и контроля
- Разрабатывать системы логистического обслуживания
- Оптимизировать запасы и проч.

1. Анализ полной стоимости

- учет всех экономических изменений, возникающих при каких-либо изменениях в логистической системе
- идентификация всех затрат в логистической системе и такая их перегруппировка, которая позволит уменьшить суммарные затраты.
- > возможность повысить затраты в одной области, если в целом по системе это приведет к экономии – это интегрированный подход к логистике

«Айсберг» полных затрат



Необходимы специальные знания и учет косвенных затрат

Пример применения метода:

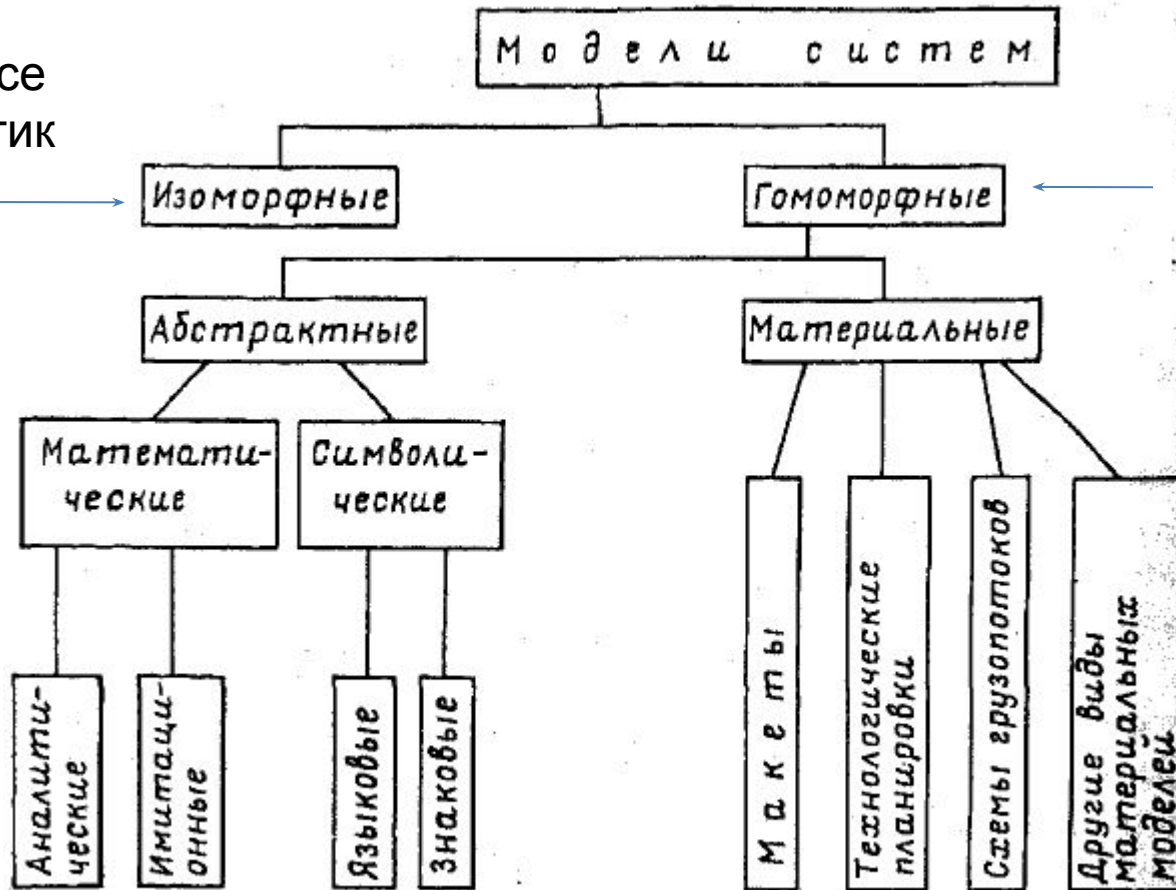
Выбор между приобретением собственного склада и использованием склада общего пользования

2. Моделирование в логистике

- Прогноз поведения процесса или системы («Что будет, если....?») -> важна степень подобия модели моделируемому объекту

Модели

Включают все
характеристик
и объекта-
оригинала



Частичное
подобие
оригиналу

3. Экспертные системы

- специальные компьютерные программы, помогающие специалистам принимать решения, связанные с управлением материальными потоками:
 - Принятие решение быстро
 - Обучение персонала в короткие сроки
 - Сохранение ноу-хау
- НО: экспертным системам не хватает здравого смысла

Пример: Inventory management system ВВС США

4. Показатели логистики

1. Средний запас на складе

Z_{cp1} - средний запас за 1ый период

$$Z_{cp1} = \frac{Z_n + Z_k}{2}$$

Z_n – запас на начало 1го периода

Z_k – запас на конец 1го периода

2. Товарооборачиваемость – характеристика процесса возобновления товарного запаса

2.1 Скорость товарооборота (Сто)

O – товарооборот за период

$$C_{то} = O / Z_{cp}$$

Z_{cp} – средний товарный запас за период

2.2 Время обращения товара

$$T = \frac{Z_{cp} \times t}{O}$$

t – число дней в периоде

$$T = \frac{t}{C_{то}}$$

Показатели логистики

3. Доля запасов в обороте

$$D_3 = \frac{Z_{cp}}{O} \times 100\%$$

4. Затраты на логистику, приходящиеся на единицу товарооборота D_4

$$D_4 = \frac{C_l}{O} \times 100$$

C_l – затраты на логистику за период
 O – товарооборот за период

5. Грузооборот склада (мощность склада)

$$G = \frac{Q}{T}$$

Q – количество тонн на складе за период T
 T – продолжительность периода времени

Функциональные области ЛОГИСТИКИ

1. Закупочная логистика
2. Складская логистика
3. Производственная логистика
4. Распределительная логистика
5. Транспортная логистика
6. Информационная логистика

*Почему в России закупочная логистика
развита слабо?*

Закупочная логистика

- *На тактическом уровне:* ежедневные операции с закупками с целью избежания дефицита или отсутствия необходимого товара
- *На стратегическом уровне:* процесс управления закупками, связи и взаимодействия с другими отделами компании, внешними поставщиками, разработка новых закупочных схем и методов и проч.

Цели службы снабжения

1. Устанавливать взаимоотношения с поставщиками – «ввязывание» предприятия в макрологистическую систему
 - Ориентация на партнерские долгосрочные отношения
 - Общность интересов и целей
 - Соблюдение обязательств
2. Интеграция в микрологистическую систему
 - Согласованность действий с производством и сбытом
 - Реализация маркетинговой стратегии

Вопросы закупочной логистики

1. Что закупить?
2. Сколько закупить?
3. У кого закупить?
4. На каких условиях?

И как все это связать с производством и деятельностью предприятия с поставщиками?

Задачи закупочной логистики

•Что?

- Определение потребности в материальных ресурсах (количество, вес, размер, требуемый сервис)
- «Сделать или купить»?

•Где?

- Исследование рынка закупок (анализ основного рынка, рынка заменителей, новых рынков, оценка рисков)

•У кого?

- Выбор поставщиков (база данных, оценка сотрудничества)

•Закупки

- Переговоры, заключение договора, выбор методов поставок и оплаты, осуществление транспортировки

•Контроль

- Качество, сроки поставок, сроки оформление заказов, транспортировки, сервис

•Бюджет

- Подготовка бюджета, определение всех затрат

•Координация

- Координация и связь закупок с производством, сбытом, складированием, транспортировкой, налаживание взаимоотношений с поставщиками

Выбор поставщика

- Объявление конкурса
- Ярмарки, конференции
- Переписка, рекламные материалы

Критерии:

- Удаленность
- Сроки выполнения заказов
- Наличие резервных мощностей
- Контроль качества
- Кредитоспособность и проч.

Оценка результатов работы с поставщиками

Рейтинг поставщиков

Критерий выбора	Удельный вес критерия	Оценка от 1 до 10	Оценка по критерию
1. Надежность поставки	0,3	7	2,1
2. Цена	0,25	6	1,5
3. Качество товара	0,15	8	1,2
4. Условия платежа	0,15	4	0,6
5. Возможность внеплановых поставок	0,10	7	0,70
6. Финансовое состояние поставщика	0,05	4	0,2
ИТОГО	1		6,3

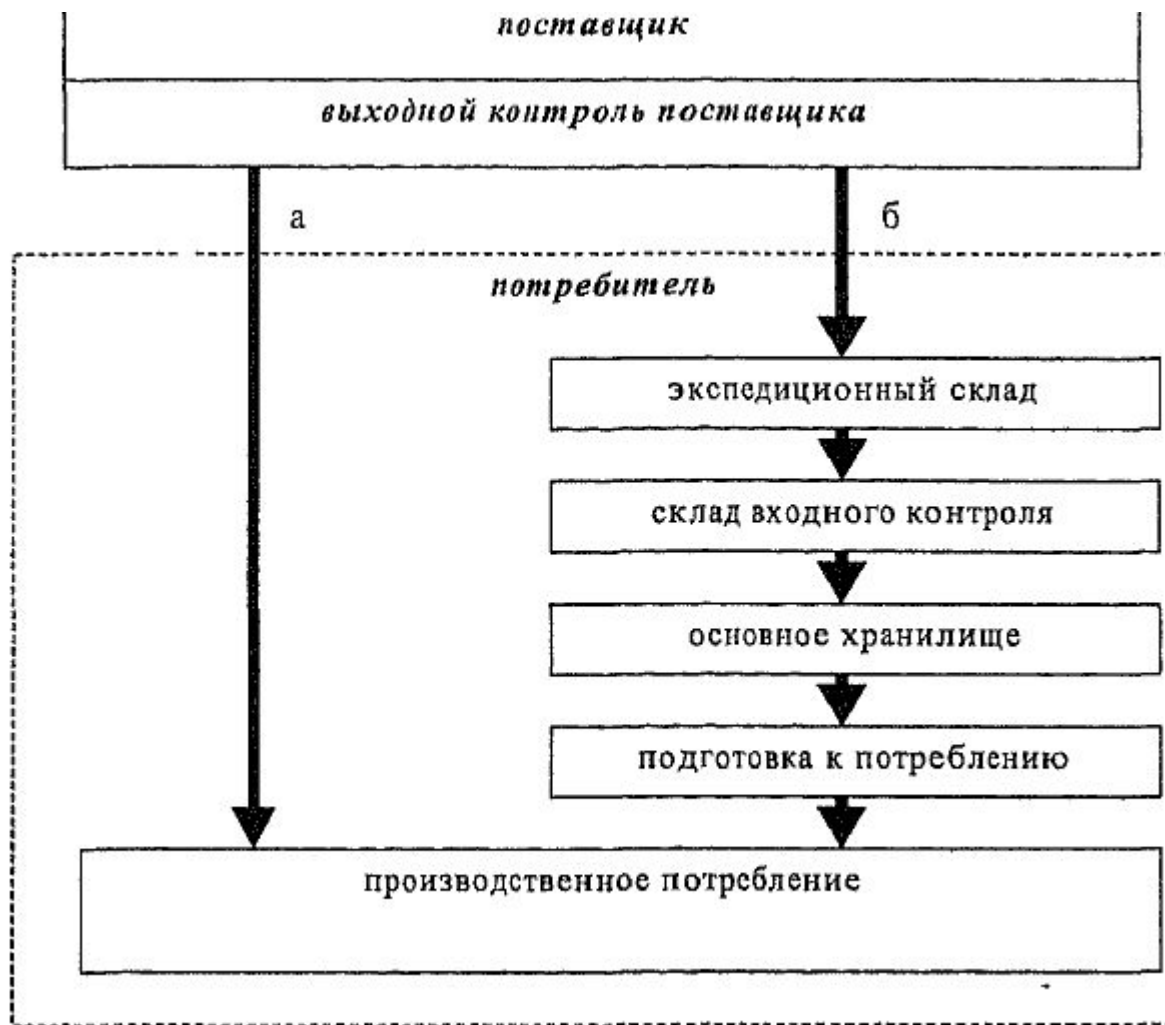
Система поставок «Точно в срок»

Спрос на одном участке цепи определяется спросом, предъявленным в ее конце



- это система производства и поставки комплектующих или товаров к месту производственного потребления или к моменту продажи в торговом предприятии в требуемом количестве и в нужное время

Поставки «Точно в срок»



- А) поставки ТВС
- Б) традиционная схема поставки

Сложности на пути к ТВС

- Требования потребителя к качеству
- Сокращение степени диверсификации
- Удаленность потребителя
- Расписание поставок
- Размер партии и периодичность поставки

Метод быстрого реагирования

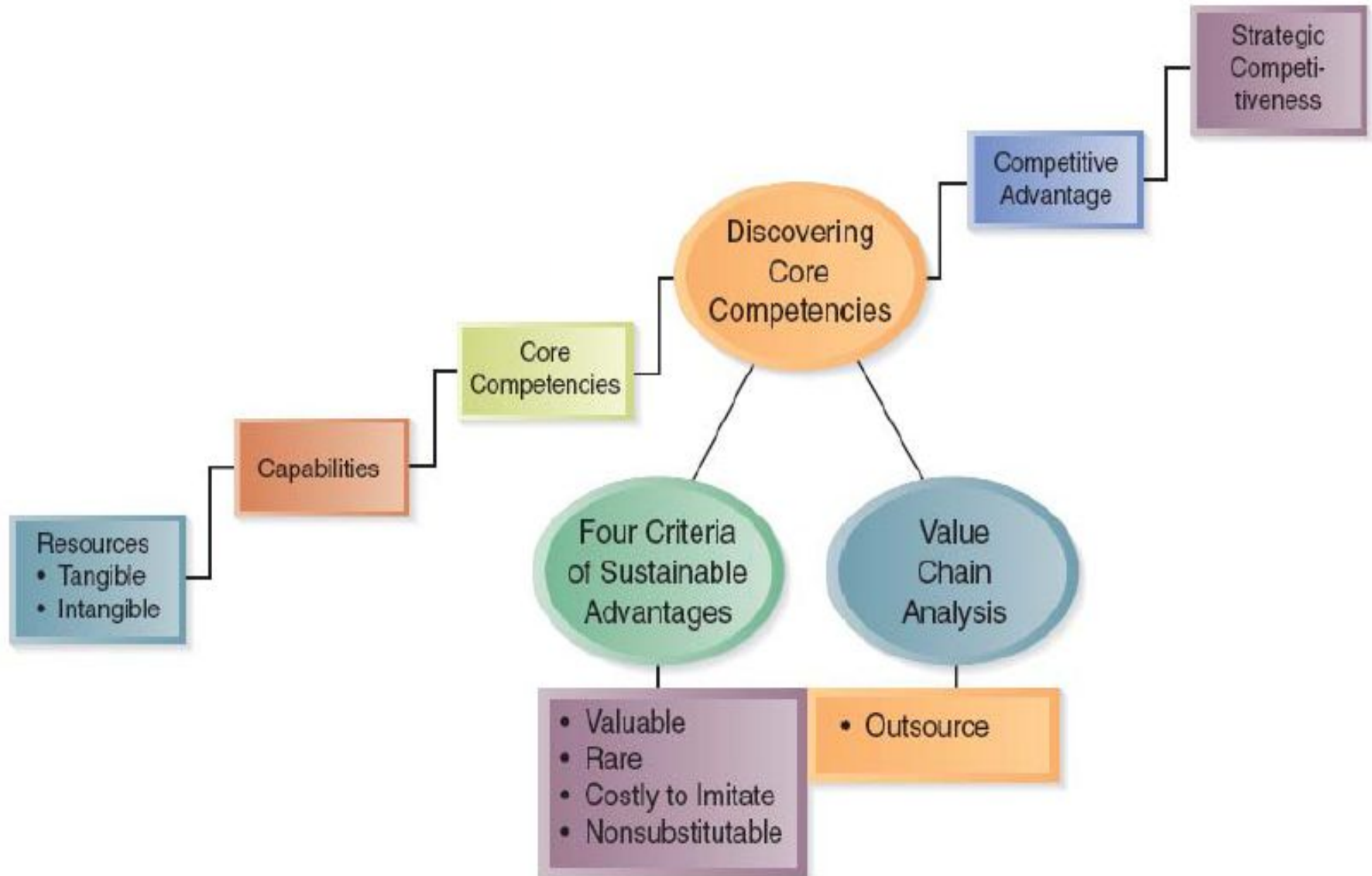


Технологии метода:

1. Автоматическая идентификация штриховых товарных кодов
 2. Электронный обмен данными
 3. Автоматическая идентификация грузовых единиц (например, транспортировочных контейнеров)
- **Новая концепция бизнеса** – дух партнерства и сотрудничества между организациями

Logistics strategy.
Relationship approach to purchasing.

Components of internal analysis



Analysis of Internal Resources - The Value Chain



Analysis of the External Environment: Porter's 5 forces

Macroenvironment

Macroeconomic forces

- Growth rate
- Industry rates
- Currency exchange rates
- Inflation / deflation rates

Political & legal forces

- Laws
- Regulations

Demographic forces

- Age
- Gender
- Ethnic origin

Global forces

- Trade barriers

Technological forces

- Creative destruction of industries

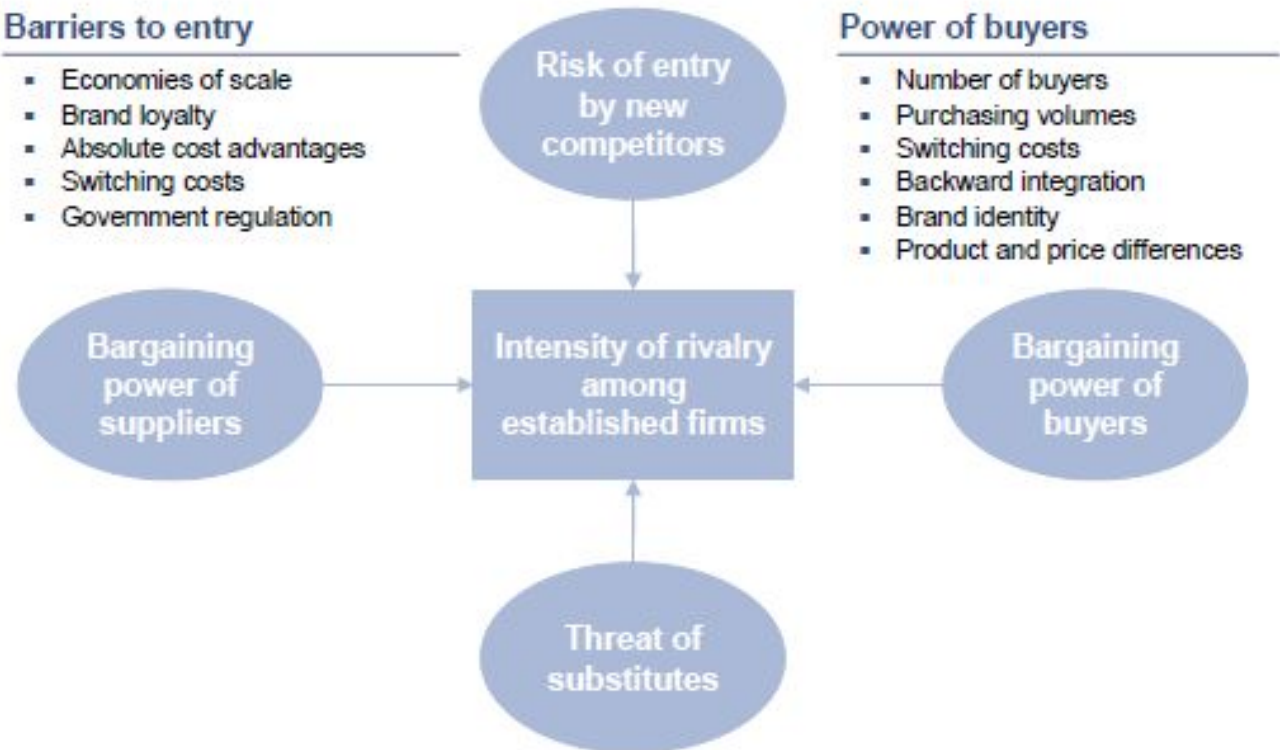
Social forces

Barriers to entry

- Economies of scale
- Brand loyalty
- Absolute cost advantages
- Switching costs
- Government regulation

Power of buyers

- Number of buyers
- Purchasing volumes
- Switching costs
- Backward integration
- Brand identity
- Product and price differences



Power of suppliers

- Switching costs
- Substitutes
- Supplier concentration
- Volumes
- Forward integration

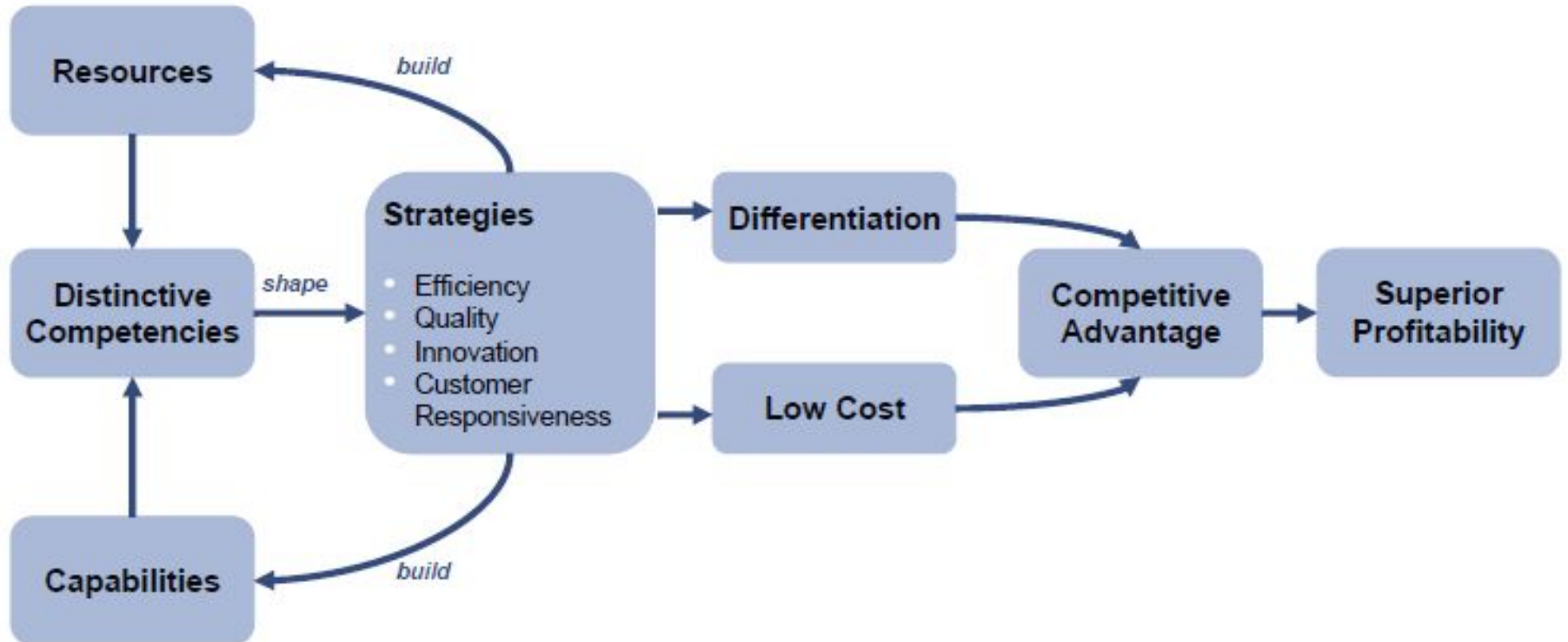
Intensity of rivalry

- Industry competitive structure
- Industry demand
- Cost conditions
- Exit barriers

Substitute products

- Product and price differences
- Brand loyalty of customers
- Implementation costs

Strategy at the functional level



Source: Hill & Jones (2009): Theory of Strategic Management with Cases. South-Western.

Building Blocks of Competitive Advantage



The Triangle of Logistics Decision Making

Inventory

- Inventory levels
- Deployment of inventories
- Control methods

Location

- Number, size and location of facilities
- Assignment of stocking points
- Assignment of demand to stocking points or sourcing points
- Private/public warehousing



Transportation

- Modes of transport
- Carrier routing, scheduling
- Shipment size / consolidation

Examples of Strategic Logistics Decision Making

Area	Strategic	Tactical	Operational
Facility location	Number, size and location of warehouses, plants and terminals		
Inventories	Stocking locations and control policies	Safety stock levels	Replenishment quantities and timing
Transportation	Mode selection	Seasonal equipment leasing	Routing, dispatching
Order processing	Order entry, transmittal and processing system design	Priority rules for customer orders	Expediting deliveries
Warehousing	Handling equipment selection, layout design	Seasonal space choices and private space utilization	Order picking and restocking
Purchasing	Development of supplier-buyer relationships	Contracting, vendor selection, forward buying	Order releasing and expediting supplies

Relationship marketing and network approach in marketing

Key points

- Transactions versus relationships.
- Trends driving relationships.
- Relationship marketing definitions.
- The domain and dimensions of relationship marketing.

Relationship marketing?

- Since 80s Relationship Marketing is one of the most popular topics in marketing and business management discourse:
 - *Academic conferences*
 - *Practitioner conferences*
 - *Academic journal articles*
 - *Specialist marketing magazines*
 - *Etc*
- Why???

Transactional Marketing (1)

- Emphasis on getting new customers
- Short-term orientation
- Interest in making a single sale
- Limited commitment to customers

Transactional Marketing (2)

- Research on customer needs to complete one transaction
- Success means making a sale
- Quality is a production concern
- Limited service commitment

Customer is a key in RM

- Emphasis on keeping customers as well as getting new ones
- Interest in multiple sales and enduring relationships (Long-term orientation, Lifetime value)
- High level of ongoing commitment to customers
- Continuing research in customer need to enhance relationship
- Success means customer loyalty, repeat purchases, customer recommendations, and low customer turnover

Discussion

- What are the main factors of RM development in the world today?
 - Please classify the factors in the today's economy, leading to the need for RM...

Trends driving relationships

- Globalization of markets and organizations that span them
- Rapid technological advancements, especially in IT
- The adoption of total quality programs by companies
- Expanding of service sphere
- Increasing complexity of relationships

Relationship Marketing is...

- Relationship marketing refers to all marketing activity directed toward establishing, developing and maintaining successful relationships

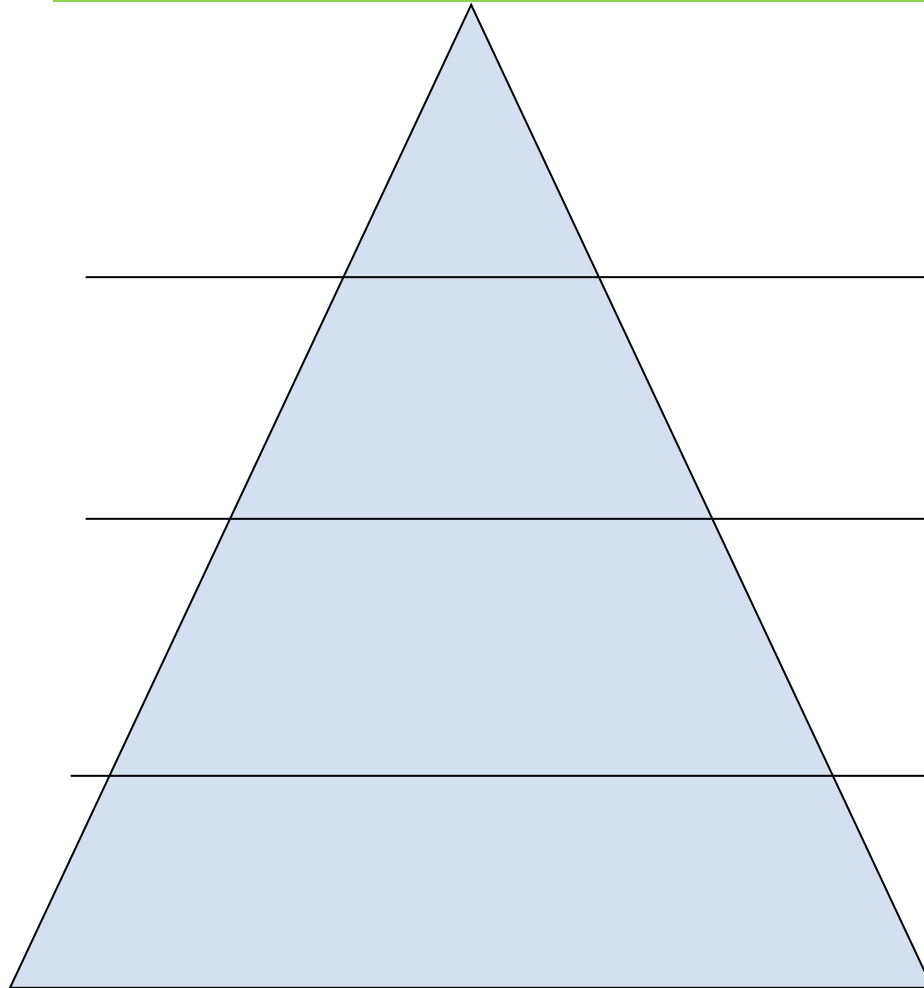
(R.Morgan & S.Hunt, 1994)

Relationship Marketing is...

- The objective of RM is to identify and establish, maintain and enhance and when necessary terminate relationships with customers and other stakeholders, at a profit so that the objectives of all parties involved are met; and this is done by mutual exchange and fulfillment of promises.

(Gronroos, 1994)

Relationship Marketing Domain



Database marketing

**Business/customer
partnering**

**Company
relationships**

Catch-all category

[Brodie et al., 1997]

Discussion

- What are the benefits of relationship development?
- What are the losses of relationship development?

General properties of relationships

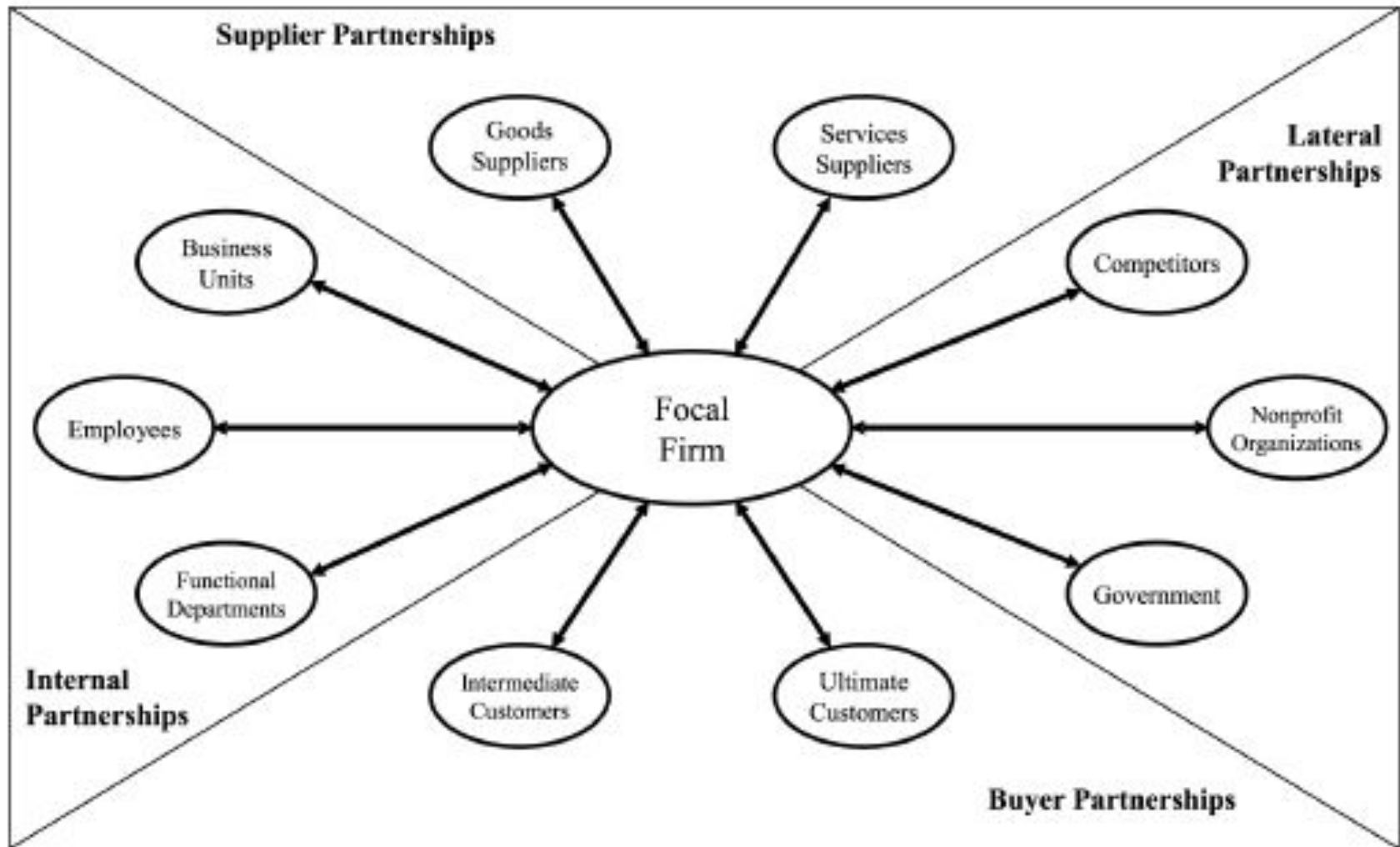
- Collaboration
- Commitment, dependency and importance
- Trust, risk and uncertainty
- Power
- Frequency, regularity, intensity
- Closeness and remoteness
- Formality, informality and openness
- Routinization, etc.

Supplier partnerships

Outline

1. The core firm and its relationships
2. Partnership drivers
3. Partnership benefits and downsides
4. Stages of Buyer-Seller Relationships Development
5. Content of partnering
6. Purchasing strategy

1.1 Forms of relationships



1.2 Terminology

- Supplier partnerships (Co-makerships, partnering etc.) – two-way relationship within the vertical chain
 - Vertical partnerships (compare to horizontal partnerships)
 - All or part of supply-chain
 - B2B
- “Partnering is a relationship between customer and supplier organizations, recognized as such by the parties involved, whose principal objective is a shared increase in the effectiveness and efficiency of joint responsibilities within the remit of their relationship” [Egan, 2008]
 - Win-win situation, positive-sum game
 - Joint responsibilities

2.1 Make or Buy versus Core Business

- What is Core Business – today and tomorrow?
 - ✓ Market changes
 - ✓ Customer demands
 - ✓ Technology development
 - ✓ Own capability
 - ✓ Company's strategy

2.2 Grow of customer-supplier partnering agreements are dew:

- The purchased part of the finished product is increasing – concentration on core competence
- The products are changed/modified faster – new materials, new suppliers
- New markets become available - new customers, new suppliers, new logistics, new cooperation concept
- Competition is increasing – market price is decreasing
- Rapid technological development has increased the cost of research and development
- Etc.

2.3 The Structure of Purchasing

Purchasing

```
graph TD; A[Purchasing] --> B[Daily Purchasing]; A --> C[Strategic Purchasing];
```

Daily Purchasing

Initiate deliveries

Delivery plans

Follow-up, statistics

Daily supplier contacts

Suggestions for
improvements

Strategic Purchasing

Selection of suppliers/contracts

New suppliers/materials

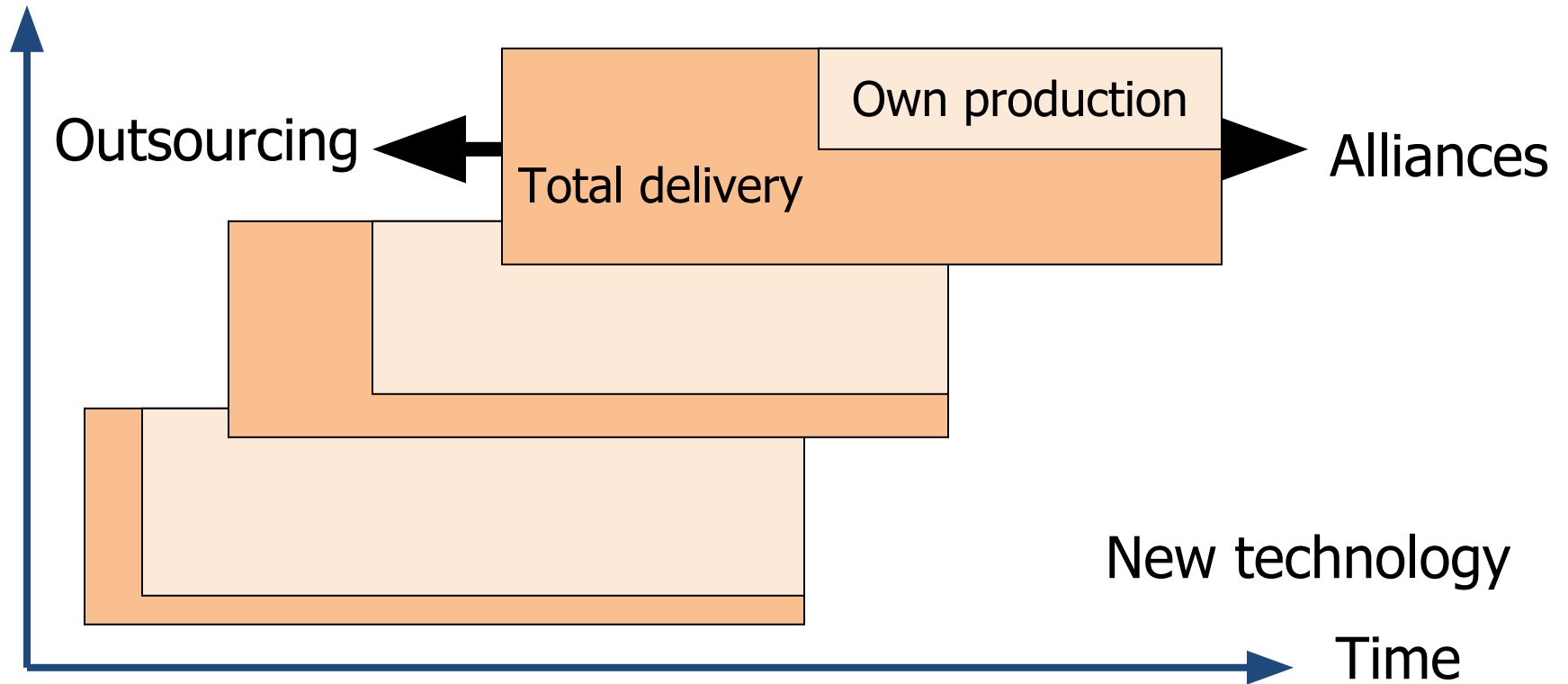
Total cost reduction

Benchmarking

Standardization

2.4 Change of Product Scope

Market demands



2.5 Core Competence

Core Competence

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graph TD; A[Core Competence] --> B[Make or Buy (Outsourcing)]; A --> C[Alliances]
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Make or Buy (Outsourcing)

Alliances

3.1 Advantages of partnering

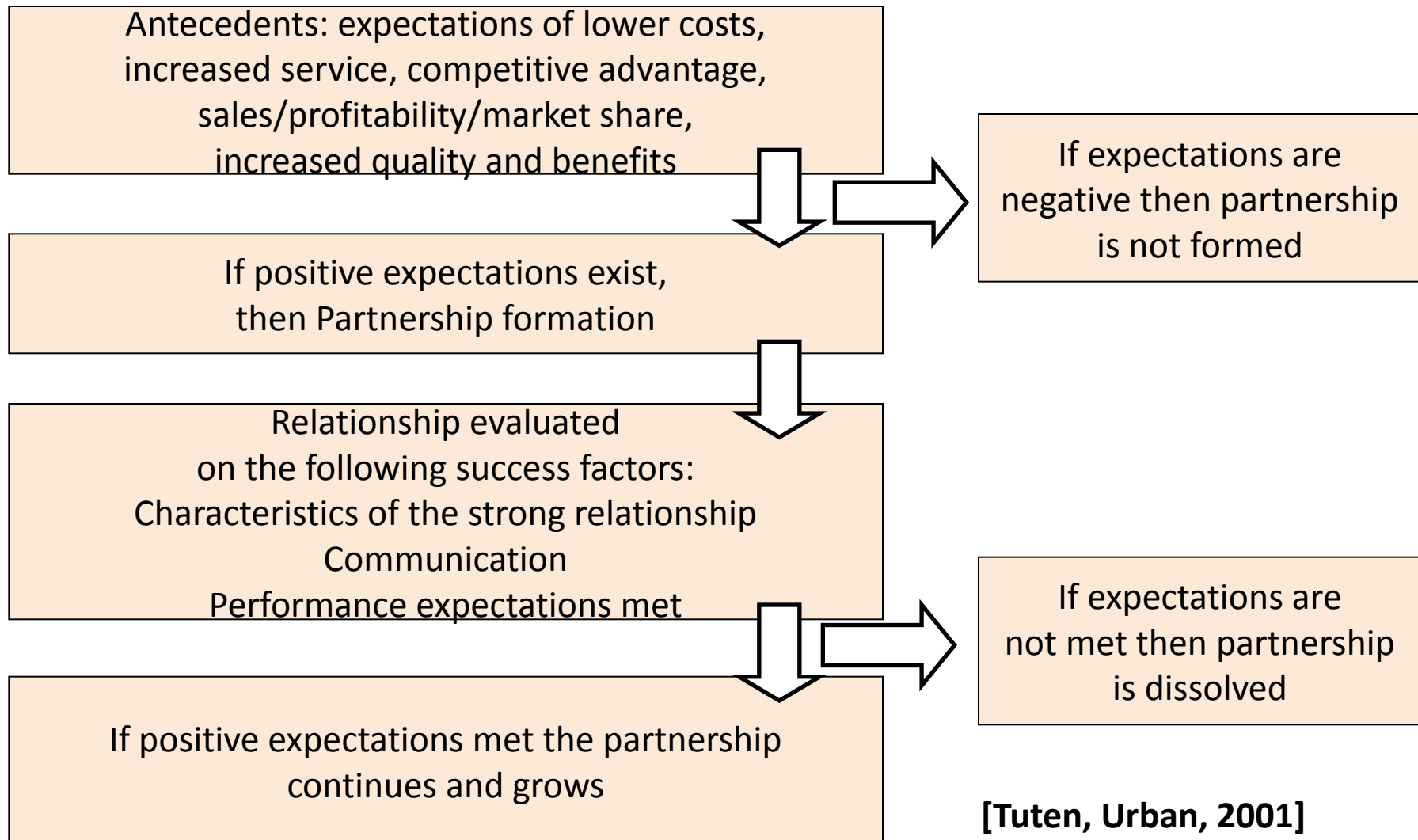
- Interdependence reduces transaction costs and generates better quality while keeping management costs lower
- The supplier gains an in-depth understanding of the customer's requirements and can be proactive in suggesting product improvements
- The supplier's personnel become familiar with the customer's way of doing things, potentially reduces misunderstandings and improving the speed of response
- Greater supplier involvement at any early stage in new projects and new product development can increase the 'speed to market'
- The partner usually gains privileged access to information about long-term buyer's plans
- There is an increased information flow and greater information trustworthiness
- The ability of both parties to focus on those aspects of the value-added chain that are their core competencies is increased
- Etc.

[Brennan, 1997], [Sheth and Parvatiyar, 2000]

3.2 Disadvantages of partnering

- The risk of becoming heavily committed to the wrong partners
- Customer-specific or supplier-specific investments (sunk costs)
- Lack of market incentives because absence of vigorous competition
- Etc.

4.1 Expanded model of partnership formation and success (2)



[Tuten, Urban, 2001]

4.2 Model of relationship development process [Wilson, 1995] (1)

- 1. Partner selection**
 - Exploration stage in Dwyer and Schurr's model
- 2. Defining purpose**
 - Tradeoff between mutual and individual goals
- 3. Setting relationship boundaries**
 - degree to which each partner penetrates the other organization
- 4. Creating relationship value**
 - Competitive abilities of the partners are enhanced being in the relationship
- 5. Relationship maintenance**
 - Activities aimed at broadening the scope of relationships, increasing its longevity, level of parties' involvement etc.

4.3 The ending of business relationship

- break-up (Baxter, 1985);
- dissolution (Seabright et al., 1992; Tahtinen and HalinenKaila, 1997; Alajoutsijarvi et al., 2000);
- divorce (Guillet de Monthoux, 1975; Perrien et al., 1994);
- exit (Alajoutsijarvi et al., 2000; Hakansson and Snehota, 1995)
- termination (Ping and Dwyer, 1992)

5.1 Power and dependency

- Power imbalance results in one partner's dependence (Dominant vs. Dependent)
- In reality balance of power (balanced dependence) is rarely symmetrical □ opportunities for one party to pursue short-term advantage
- Advantages of symmetrical dependence:
 - Mutual safeguard
 - Collective incentive to maintain a relationship
 - Constructive conflict resolution
 - Joint problem solving
 - Etc.
- What factors lead to one party's dominance?

5.2 Examples of interaction functions that can be jointly executed

- Production planning
- Problem solution in supply chain
- Investments in supply chain development
- Creation of information systems to support the interaction
- Trainings and education of personnel, involved in interaction
- Market research in supply market
- Legal support of purchasing process
- Etc.

6. Purchasing strategy (1)

- Shall we purchase the commodity or shall we make it ourselves?
- Is Supply Chain Management (SCM) - strategy based on the overall company's strategy?
- Are there conditions in the place to implement the SCM-strategy ?
- Do we use Cross Functional approach to SCM-work ?

6. Purchasing strategy (2)

- Are our suppliers integrated in our key processes in an optimal way? (e.g. the development process, the delivery process)
- Have we established long-term, strategic alliances with key suppliers?
- Are we prepared to enter long-term purchase agreements?
- Have we optimized the number of suppliers?

6. Purchasing strategy (3)

- Do we monitor and benchmark our suppliers and our SM-process?
- Do we get the best possible design, delivery time, cost and quality from our current suppliers?
- Who are our main competitors and with whom do they purchase?

6. Purchasing strategy (4)

- Shall we buy the commodity in a country where costs are low?
- What would happen if we bring some key suppliers together and ask them to exchange knowledge about technology, production equipment etc in order to satisfy our needs better?
- What risk do we encounter on the supply side and how do we handle them?