Lecture 5
Alternatives to Vertical Integration
Overview

Integration and Alternative to Integration
Technical vs. Agency Efficiency
Double Marginalization
Alternatives to Integration
  – Tapered integration
  – Franchising
  – Strategic alliances & joint ventures
  – Implicit contracts
For each step in the vertical chain the firm has to decide between market exchange and vertical integration.

The degree of vertical integration differs:
- Across industries
- Across firms within an industry
- Across transactions with in firm
The Tradeoff in Vertical Integration

- Using the market improves *technical efficiency* (least cost production)
- Vertical integration improves *agency efficiency* (coordination, transactions costs)
- Firms should “economize” - choose the best possible combination of technical and agency efficiencies.
Path Dependence

- A firm may not possess the skills to sell to multiple buyers.
- When a supplier is acquired, the firm will have the skills to sell to others besides itself.
- Competitive considerations may limit the use of this resource.
Technical Efficiency

- Using the market leads to higher technical efficiency compared to vertical integration (power of market discipline)

- The difference in technical efficiency of market over vertical integration ($\Delta T$) depends on the nature of the assets involved in production
Technical Efficiency

- As the assets become more specialized the market firm’s advantage becomes weaker.
- The difference in technical efficiency of market over vertical integration ($\Delta T$) declines with greater asset specificity.
Agency Efficiency

- At high levels of asset specificity, differential agency efficiency ($\Delta A$) of market over vertical integration is negative.
- When specialized assets are involved, potential for a holdup is high and the transactions costs are higher.
Agency Efficiency

- At low levels of asset specificity, differential agency efficiency of market over vertical integration ($\Delta A$) is likely to be positive.
- Without the holdup problem, market exchange could be more “agency efficient” than in-house production.
Technical and Agency Efficiency

Tradeoff between Agency Efficiency and Technical Efficiency
Efficiency Tradeoff

- The combined (market over vertical integration) differential efficiency ($\Delta C$) will be negatively related to asset specificity.
- At high levels of assets specificity, vertical integration is more efficient.
- At low levels of assets specificity, market firms have an edge.
Efficiency Tradeoff and Scale

- When the scale of production increases, the vertically integrated firm enjoys better economies of scale.
- With increased scale, the differential technical efficiency decreases for every level of asset specificity.
Efficiency Tradeoff and Scale

- With an increase in scale, the differential agency efficiency becomes more sensitive to asset specificity.
- Differential agency efficiency will
  - increase with scale for low asset specificity and
  - decrease with scale with high asset specificity.
Efficiency Tradeoff and Scale

The Effect of Increased Scale on Tradeoff between Agency and Technical Efficiency
Efficiency Tradeoff and Scale

- The combined differential efficiency ($\Delta C$) sharply declines for low asset specificity.
- The degree of asset specificity at which market is just competitive with vertical integration declines.
- Vertical integration is preferred to market exchange over a larger range of asset specificity.
The Efficiency Tradeoff Model: Conclusions

- Supplier’s economies of scale will make routine products and services to be procured in the market.
- Firms with large shares in the products are likely to be vertically integrated.
- Relationship-specific assets will tilt the advantage in favor of vertical integration.
Real-World Evidence

- As manufacturing firms increased in size they forward integrated into marketing and distribution.
- Forward integration was more likely when specialized investments were needed.
- Statistical evidence supports scale and asset specificity effects.
Real-World Evidence

- GM is more vertically integrated than Ford is, for the same asset specificity (scale)
- In aerospace, greater design specificity increases the likelihood of vertical integration of production
- Among utilities, mine-mouth plants are more likely to be integrated compared with other plants
Real-World Evidence

➢ In the electronics components industry firms rely on own sales force:
  – when there is greater asset specificity
  – when they are larger manufacturers
  – when performance measurement is more difficult
Vertical Integration and Asset Ownership

- Make-or-buy decision is essentially a decision regarding ownership and control rights about assets. (Grossman, Hart and Moore)
- Ownership brings with it the residual control rights (rights not specified in contracts).
- Vertical integration transfers the residual rights of control to the firm.
Vertical Integration and Asset Ownership

- With complete contracts it does not matter who owned the assets in the vertical chain.
- With incomplete contracts, ownership determines the willingness of each party to make relationship-specific investments.
Vertical Integration and Asset Ownership

Three ways to organize the vertical chain
– The two units are independent (non integration)
– Upstream unit owns the assets of the downstream unit (forward integration)
– Downstream unit owns the assets of the upstream unit (backward integration)
Asset Ownership and Integration

- The form of integration affects the incentives to invest in relationship-specific assets
- Whether vertical integration is optimal or not depends on the relative contribution to value added by each party’s investment
Asset Ownership and Integration

- If the investments by the upstream player and the downstream player are of comparable importance, market exchange is preferred.
- If the investment by one player is more important in value creation, vertical integration is preferred.
Asset Ownership and Integration

- Asset ownership is an important dimension of vertical integration.
- There could be degrees of integration depending on the extent of control over specialized assets.
  - Example: Auto manufacturers can use independent suppliers for body parts but own the dies and stamping machines.
Governance and Vertical Integration

- Use of market firms entail contracting inefficiencies
- Vertical integration replaces contracting with governance
- Delegation of decision rights and control of assets occur within the firm instead of between firms.
- Poor governance may nullify the benefits of vertical integration
Governance and Vertical Integration

- When physical assets are involved, upstream (or downstream) asset ownership can be used along with market exchange.

- When human assets are important, acquiring control of these assets can be done only through a full fledged vertical integration.
Process Issues in Vertical Mergers

- The process by which governance develops excludes certain governance arrangements.
- Post-merger conflicts may not allow cooperation between managers of the acquiring and the acquired firm.
Alternatives to Vertical Integration

- Tapered integration (making some and buying the rest)
- Joint ventures and strategic alliances
- Semi formal collaborative relationships based on long term implicit contracts between firms
Tapered integration is a mixture of vertical integration and market exchange.

A firm may produce part of its input on its own and purchase the rest.

A firm may sell part of its output through in-house sales efforts and sell the rest through independent distributors.
Tapered Integration: Advantages

- Additional input/output channels without massive capital investments
- Information about costs and profitability from internal operations can help in negotiating with market firms
- Threat of self manufacture can impose discipline on external suppliers.
Tapered Integration: Advantages

- Internal channels will be motivated by potential expansion of the use of outside sources.
- Internal supply capabilities will protect against potential holdups.
Tapered Integration: Disadvantages

- Possible loss of economies of scale
- Coordination may become more difficult since the two production units must agree on product specifications and delivery times
- Managers may be self-serving in continuing with internal production well after it has become inefficient to do so
Strategic Alliances and Joint Ventures

- Strategic alliances involve cooperation, coordination and information sharing for a joint project by the participating firms.
- A joint venture is an alliance where a new independent organization is created and jointly owned by the promoting firms.
Strategic Alliances

- Strategic alliances and joint ventures fall between pure market exchange and full vertical integration.
- Alliances rely on trust and reciprocity instead of contracts.
- Disputes are rarely litigated but resolves through negotiation.
Strategic Alliance - Scenarios

- Uncertainty surrounding future activities prevents the parties from writing detailed contracts.
- Transactions are complex and one cannot count on contract law to “fill the gaps.”
- Relationship-specific assets give rise to potential holdup problems
Strategic Alliance - Scenarios

- It is costly for any one party to develop the necessary expertise.
- Market opportunity for the transaction is not expected to last very long making a long term contract or merger unattractive.
- Regulatory environment necessitates acquiring a local partner for the venture.
Collaborative Relationships

- Traditionally Japanese and Korean industrial firms have been less vertically integrated compared to their western counterparts.
- Recent trend in the West is vertical disintegration and a focus on core competencies.
Collaborative Relationships

- Japanese and Korean firms have organized the vertical chain using long term relationships rather than arm’s length transactions.

- Two major types of collaborative relationships are found in Japan:
  - Subcontractor networks
  - Keiretsu (Chaebol in Korea)
Subcontractor Networks

- Japanese manufacturers maintain close, informal, long term relationship with their network of subcontractors
- The typical relationship between a manufacturer and a subcontractor involves far more asset specificity in Japan than in the West.
Keiretsu

- Members have strong institutional linkages.
- Links are further strengthened by social affiliation and personal relationship among executives.
- Easy coordination and no holdups when vertical chain activities are performed by *keiretsu* members.
Evidence on *Keiretsu*

- Recent research indicates that *keiretsu* are not what they were thought to be.
- Members have extensive business dealings outside their *keiretsu*. They borrow from the *keiretsu* banks as well as from outside banks.
Debt, Equity, and Trade Linkages in Japanese Keiretsu
Implicit Contracts

- Implicit contracts are unstated understanding between firms in a business relationship.
- Members of a *keiretsu* work with each other through implicit contracts.
- Longstanding relationship between firms can make them behave cooperatively towards each other without any formal contracts.
Implicit Contracts

- The threat of losing future business (and the future stream of profits) is enough to deter opportunistic behavior in any one period.
- The desire to protect one’s reputation in the market place can be another mechanism that makes implicit contracts viable.
The decision to vertically integrate involves a trade-off between technical efficiency and agency efficiency

- Technical efficiency comes from using the least cost production methods
- Agency efficiency refers to the administrative costs of transacting in the market vs. producing internally
Summary

- Vertical integration is preferred when it is less costly to organize activities internally than to purchase them in the market.
- Vertical integration is more attractive when:
  - There are limited economies of scale or scope.
  - The larger the firm.
  - The more production involves assets that are product specific.
Summary

Alternatives arrangements to vertical integration include

– Tapered integration
– Franchising
– Strategic alliance or joint ventures
– Implicit contracts