Chapter 9
Information Systems
Sourcing

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Learning Objectives

• Describe the Sourcing Decision Cycle Framework.
• Explain the differences between insourcing and outsourcing, inshoring and offshoring, and nearshoring and farshoring.
• List the major drivers for outsourcing.
• Describe how offshoring must be managed.
• Define the different ways of outsourcing including ASPs.
• Understand the difference between full and selective outsourcing.
• Describe the risks and strategies utilized to mitigate risks.

Real World Example

• Kellwood, an American apparel maker, ended its soup-to-nuts IS outsourcing arrangement with EDS after 13 years.
• The original outsourcing contract integrated 12 individual acquired units with different systems into one system.
• In 2008, Sun Capital Partners purchased Kellwood and made it private.
• The COO was facing a mountain of debt and possibly bankruptcy and wanted to:
  – bring the IS operations back in-house.
  – reduce costs.
  – overcome the lack of IS standardization.
• The CIO was concerned that the transition from outsourcing to insourcing would cause serious disruption to IS service levels and project deadlines.

Real World Example (Cont.)

• Kellwood hired a third-party consultant.
  ___________ would help save money and respond to changes caused by both the market and internal forces.
• The transition and the implementation went smoothly.
• By performing streamlined operations in-house, it was able to report an impressive 17% savings in annual IS expenses after the first year.
• Companies adopt outsourcing as means of controlling IS costs and acquiring "best of breed" capabilities.
• IS departments must maximize the benefit of these relationships to the enterprise and preempt problems that might occur.
• Failure could result in deteriorating quality of service, loss of competitive advantage, costly contract disputes, low morale, and loss of key personnel.

Discussion Question

• #1. The make-versus-buy decision is important every time a new application is requested of the IS group. What, in your opinion, are the key reasons an IS organization should make its own systems? What are the key reasons it should buy an application? [MAKE-versus-BUY]

• Per the text, the key drivers to insource (Make) are:
  – Good for core competencies;
  – Good for confidential or sensitive IS services or software development;
  – Time available in-house to complete software development projects;
  – In-house IT professionals have adequate training, experience or skills to provide service or develop software.
• The buy decision will also depend upon things such as cost, availability of resources (human, technical, etc.), and other drivers. Per the text the drivers are:
  – Offers costs savings;
  – Eases transition to new technologies;
  – Offers opportunity for better strategic focus;
  – Provides better management of IS staff;
  – Offers better ability to handle peaks;
  – Makes it easier to consolidate data centers;
  – Provides a cash-infusion
Key Drivers Competitive Market

- It is a very competitive for any businesses competing in a global market.
- **Cost** (profit) and **quality** (or satisfaction) are key drivers in this market place.
- Porter’s five competitive forces model apply as **external** influences on the company, but are in sufficient alone to inform the company in the market place.
- Why?


Internal Forces

- To Porter’s model, the following five internal forces should be added (4C’s and 1Q):
  - Customer focuses;
  - Communications;
  - Core competencies;
  - Complexity; and
  - Quality


Sourcing Decision Cycle Framework

- **Sourcing** involves many decisions (Figure 9.1).
- The first step is the **make or buy** decision.
  - If the “buy” option is selected, the company outsources.
  - The company must decide on “how” and “where.”
  - Is the outsourcing provider in its own country, offshore, or in the cloud?
  - If the company decides to offshore, it must decide whether to offshore nearby or far away.
- Periodically must evaluate the arrangement and adjust it.
- Continual evaluation is needed to determine if the arrangement is satisfactory or not—either for outsourcing or insourcing.
Insourcing

- A firm provides IS services or develops IS in its own in-house IS organization.
- This is the “make” decision.
- Drivers that favor this decision:
  - Keep core competencies in-house.
  - IS service or product that requires considerable security or confidentiality.
  - Time available in-house to complete IS projects.
  - In-house IT personnel.
- Challenges to insourcing (Figure 9.2 and 9.2(b)):
  - Getting needed IT resources from management.
  - Finding a reliable competent outsource provider.

Insourcing Drivers

<table>
<thead>
<tr>
<th>Good for</th>
<th>Inadequate support from top management to acquire needed resources</th>
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<tbody>
<tr>
<td>core competencies</td>
<td>Finding a reliable, competent outsourcing provider that is likely to stay in business</td>
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Insourcing Challenges

<table>
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</thead>
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<tr>
<td>In-house IT professionals have adequate training, experience or skills to provide service or develop software</td>
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Figure 9.2(b) Insourcing drivers and challenges

Make or Buy? Questions and Risks

<table>
<thead>
<tr>
<th>Question</th>
<th>Make Yes</th>
<th>Buy No</th>
<th>Good for</th>
<th>Challenges</th>
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<tbody>
<tr>
<td>Core competencies</td>
<td>Yes</td>
<td>No</td>
<td>confidential or sensitive IS services or software development</td>
<td>Inadequate support from top management to acquire needed resources</td>
</tr>
<tr>
<td>Financial resources available for IS projects</td>
<td>Yes</td>
<td>No</td>
<td>core competencies</td>
<td>Finding a reliable, competent outsourcing provider that is likely to stay in business</td>
</tr>
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<td>IS professionals who can develop IS</td>
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<td>core competencies</td>
<td>Finding a reliable, competent outsourcing provider that is likely to stay in business</td>
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</table>

Figure 9.2 Make or Buy? Questions and Risks

Outsourcing

INSOURCING

INSOURCING

What is the example(s) mentioned in the Friedman’s Video (The World is Flat)?

OUTSOURCING

OUTSOURCING
OUTSOURCING

• What company was the first one propose/promote the concept of Outsourcing? And When?
  • Author Andersen in 1972

Outsourcing

• The phenomenon that appeared in the information systems field in the late 1980s was **outsourcing**, which means turning over a firm’s **computer operations**, **network operations**, or perhaps other **information systems** functions to a vendor for a specified time - generally, at least for **three** years.

• “…IT outsourcing is a harbinger of traditional IT department transformation and provides a glimpse at the emerging organizational structures of the information economy.”

• **Definition**: The purchase of a good or service that was previously provided internally, or that could be provided internally but is now provided by outside vendors.

Outsourcing (cont.)

• Drivers include:
  ✓ Reducing costs;
  ✓ Transition to new technologies;
  ✓ Focus on core business strategies;
  ✓ Provide better management and focus of IT personnel.

• Disadvantages are present in outsourcing and include
  ✓ Losing control,
  ✓ Expensive to undue decisions, etc.

• Outsourcing is when a company brings back previously outsourced IS functions.

• Outsourcing has expanded to include essential functions such as customer service and other aspects that provide competitive advantage.

Outsourcing As an Economic Strategy

• **Core** competencies

• Which sources are **less** expensive

• How much **control** is needed

The Driving Forces Behind Outsourcing

• Two main drivers
  – **focus**
  – **on core business**
  – **value**
  – **stakeholder**

Outsourcing Models

• **Classic** model
  • Outsource only those functions that do not give the company competitive advantage (prevailing method of the 70s and 80s).

• The “**Kodak effect**”
  – Kodak outsourced its data center operations to IBM and its desktop supply and support operations to Businessland.
  – Kodak retained a **skeleton IS** staff.
  – Kodak’s approach to supplier management became a model emulated by Continental Bank, General Dynamics, Continental Airlines, National Car Rental, etc.
  – Eastman Kodak Filed for Bankruptcy on Jan. 19, 2012. (Why?)

• New models:
  – **Full vs. Selective (strategic sourcing)** Outsourcing: complete outsourcing vs. only outsourcing specific functions and **Cloud computing**
Single vs. Multiple Vendors

- Pros/cons between these two options?
  - Multiple vendors allows client companies to distribute work to the “best in breed.”
    - Requires more coordination.
    - If problems may be a tendency to finger point.
  - Single vendor model is simpler but riskier.
    - Only one company to coordinate.
    - All IS “eggs” are in one basket.

Decisions about How to Outsource Successfully

2. Contracting (cont.)

- Shorter duration contracts.
  - Between three to five years.
  - Full life-cycle service contracts are broken up into stages.
- **Service Level Agreements (SLAs)** define the level of service between the clients and providers such as:
  - delivery time and expected performance of the service.
  - actions to be taken in the event of a deterioration in quality of service or non-compliance to service-level agreements.
  - service levels, baseline period measurements, growth rates, and service volume fluctuations.
  - Research demonstrates that tighter contracts tend to lead to more successful outsourcing arrangements.

3. Scope

- Client must decide whether to pursue outsourcing fully or selectively.

Deciding Where - Onshore, Offshore, or in the Cloud?

- Previously outsourcing options were either to use services onshore, (same country as the client) or offshore (a distant country).
- New sourcing option: cloud computing.
- Comparison of the three sourcing options (Figure 9.3).

Full versus Selective Outsourcing

- **Full** outsourcing implies that an enterprise outsources all its IS functions from desktop services to software development.
- **Selective** outsourcing—or strategic sourcing - an enterprise chooses which IT capabilities to retain in-house and which to give to an outsider.
- In a “best-of-breed” approach, suppliers are chosen for their expertise in specific technology areas such as:
  - Website hosting, Web 2.0 applications, business process application development, help desk support, networking and communications, social IT services, and data center operations.

Table 9.3 Trade-offs between outsourcing options.

<table>
<thead>
<tr>
<th>“How”</th>
<th>Cloud Computing</th>
<th>Outsourcing</th>
<th>Offshoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SELECTION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not negotiate solely on price</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Carefully evaluate your company’s capabilities</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Thoroughly evaluate provider’s capabilities</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Ensure provider’s complementary capabilities</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Be sure there is a technical fit</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Be sure there is a cultural fit</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Be sure relationship produces net benefit</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Select location to mitigate risk, reduce time zone differences and match culture</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Figure 9.3 Trade-offs between outsourcing options.
Cloud Computing Options

- Cloud computing options:
  - On-premise.
  - Private clouds.
    - Data is managed by the company and remains within the company’s existing infrastructure, or it is managed offsite by a third party.
  - Community clouds.
    - The cloud infrastructure is shared by several organizations and supports the shared concerns of a specific community.
  - Public clouds.
    - Data is stored outside of the corporate data centers in the cloud provider’s environment.
  - Hybrid clouds.
    - Combination of two or more other clouds.

Public Clouds Characteristics

- **Infrastructure as a Service (IaaS)**.
  - Provides infrastructure through grids or clusters or virtualized servers, networks, storage, and systems software.
  - Designed to augment or replace the functions of an entire data center.
  - The customer may have full control of the actual server configuration.
  - More risk management control over the data and environment.

- **Platform as a Service (PaaS)**.
  - Provides services using virtualized servers on which clients can run existing applications or develop new ones without having to worry about maintaining the operating systems, server hardware, load balancing, or computing capacity.
  - Provider manages the hardware and underlying operating system.
  - Limits the enterprise risk management capabilities.

Onshoring

- **Onshoring**, or *inshoring*, is performing outsourcing work domestically.
- Onshoring may be considered the opposite of *offshoring*.
- Rural sourcing, hiring outsourcing providers with operations in rural parts of America, is a growing trend.
  - Lower salaries and living costs.
  - A closer time zone, similar culture, and fewer hassles that crop up when dealing with foreign outsourcing providers.
  - Too small to handle large-scale projects.
  - May not have the most technologically advanced employees (Figure 9.4).
Going Offshore for IS Development

- When the MIS organization uses contractor services, or even builds its own data center in a distant land, it is engaged in **offshoring**, which is short for outsourcing offshore.

- The types of tasks that are outsourced are usually those that can be well-specified; however, nowadays, the functions sent offshore range from routine IT transactions to increasingly higher-end, knowledge-based processes.

- Countries such as India, the Philippines, etc, offer “offshoring”, an alternative to in-house systems development

- It raises the issue of what to send offshore, and what to keep within your enterprise MIS organization.

Deciding Where Abroad: Nearshoring, Farshoring, or Captive Center?

- **Offshoring** can be either relatively proximate (nearshoring) or in a distant land (farshoring).

- An alternative to offshoring is a captive center.

- Farshoring is a form of offshoring that involves sourcing service work to a foreign, lower-wage country that is relatively far away in distance or time zone (or both).
  - India and China are the most popular farshoring destinations.

- Nearshoring is when work is sourced to a foreign, lower-wage country that is relatively close in distance or time zone.

- The client hopes to benefit from one or more ways of being close—geographically, temporally, culturally, linguistically, economically, politically, or from historical linkages.

Offshoring

- Offshoring (or outsourcing offshore) - the IS organization uses contractor services or even builds its own data center in a distant land.

- Functions range from routine IT transactions to increasingly higher-end, knowledge-based business processes.

- Programmer salaries can be a fraction of those in the home country.

- Other costs increase due to additional technology, telecommunications, travel, process changes, and management overhead.

- Other reasons to offshore:
  - Employees in many offshore companies are well-educated (have master’s degrees) and are proud to work for an international company.
  - Offshore providers are often “profit centers” and have established Six Sigma, ISO 9001, or another certification program.

Captive Centers

- A captive center is an overseas subsidiary that is set up to serve the parent company.

- These subsidiaries operate like an outsourcing provider but are owned by the firm.

- Hybrid and shared.
  - The hybrid captive center performs the more expensive, higher-profile or mission-critical work for the parent company.
  - Outsources the more commoditized work that is more cheaply provided by an offshore provider.

- The shared captive center performs work for both a parent company and external customers.

- Nearshore or farshore.
Selecting an Offshore Destination: Answering the “Where Abroad?” Question

- Deciding where to offshore is a difficult decision that many companies face.
- Companies must consider attractiveness, level of development, and culture differences.
  - Factors affecting a country’s attractiveness:
    - high English proficiency,
    - on the verge of war,
    - high rates of crime,
    - friendly relationships with the home country,
    - regulatory restrictions,
    - data security,
    - intellectual property,
    - level of technical infrastructure available.

Offshore Destination - Development Tiers

Carmel and Tjia suggest that there are three tiers (level of development) of software exporting nations:

- **Tier 1: Mature** (the highest tier)
  - United Kingdom, United States, Japan, Germany, France, Canada, the Netherlands, Sweden, Finland, India, Ireland, Israel, China, and Russia.
- **Tier 2: Emerging**
  - Brazil, Costa Rica, South Korea, and many Eastern European countries.
- **Tier 3: Infant**
  - Cuba, Vietnam, Jordan, and 15 to 25 others.
- The higher tiered countries have higher levels of skills and higher costs.

Cultural Differences

- Misunderstandings arise because of differences in culture, language, and perceptions about time.
- Carmel and Tjia outlined some examples of communication failures with Indian developers:
  - Indians are less likely than Westerners to engage in small talk.
  - Indians often are not concerned with deadlines.
  - Indians, like Malaysians and other cultures, are hesitant about saying no.
  - What is funny in one culture is not necessarily funny in another culture.

Reevaluation—Status Quo or Change?

- Backsourcing is a business practice in which a company takes back in-house assets, activities, and skills that were part of its IS operations and were previously outsourced to one or more outside IS providers.
- Companies backsource after terminating, renegotiating, or letting their contracts expire.
- The reasons given for backsourcing often mirror the reasons for outsourcing.
- Outsourcing decisions can be difficult and expensive to reverse.
  - Requires the enterprise to acquire the necessary infrastructure and staff.
- Backsourcing is followed by another cycle of decisions as the company responds to its dynamic environment.

Outsourcing and Strategic Networks

- Many issues and risks are involved with outsourcing.
  - A strategic network is a long-term, purposeful arrangement by which companies set up a web of close relationships that provide a product or service in a coordinated fashion.
  - The client becomes a hub with suppliers as part of its network.
  - Lowers the cost of working with others in the network.
  - Company can become more efficient than its competitors (and very flexible).
  - The Japanese keiretsu is similar to a strategic network.
    - The Japanese companies manage their outsourcing activities based on the types of inputs from different types of suppliers.

Additional Strategic Networks

- Another type of strategic network is one with a parent organization or multinational and a number of their subsidiaries.
- Often one subsidiary performs outsourcing services for another subsidiary in the network.
- Given the increasingly complex structure of today’s multinationals, the role of strategic networks in outsourcing arrangements is likely to grow (Figure 9.5).
Outsourcing and Strategic Networks

A strategic network is a long-term, purposeful arrangement by which companies set up a web of close relationships that provide a product or service in a coordinated fashion. Given the increasingly complex structure of today’s multinationals, the role of strategic networks in outsourcing arrangements is likely to grow (Figure 9.5).

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<th>Providers or services provided by outside vendors</th>
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</thead>
<tbody>
<tr>
<td>Cloud</td>
<td>Computing (third party provides services over the Internet)</td>
</tr>
<tr>
<td>Offshoring</td>
<td>Outsourcing (outsourcing work performed in distant country)</td>
</tr>
<tr>
<td>Nearshoring</td>
<td>Outsourcing (at a country, nearby)</td>
</tr>
<tr>
<td>Offshoring</td>
<td>Outsourcing (at a country, usually India, China or Eastern Europe)</td>
</tr>
</tbody>
</table>

Crowdsourcing

- Definition:
  - 1) Taking a task traditionally performed by an employee or contractor, and outsourcing it to an undefined, generally large group of people, in the form of an open call
  - 2) The dynamic SM process of employing users to participate in product design or product redesign.
- Examples:
  - e.g. eBay often solicits customers to provide feedback on their eBay experience.
  - Other examples:
    - Wikipedia
    - PSY Horse Dance
- Used by companies to increase productivity, lower production costs, and fill skill gaps.
- Can be used for a variety of tasks.
- Companies do not have control over the people doing the work.
- Has cost more than traditional methods.

Why Outsourcing Alliances are So Difficult?

- Exacerbating the situation is the timing of benefits – and their perspective/interests are conflict or reverse
- Only a few outsourcers have the critical mass and access to capital markets to undertake large contracts
- Evolution of technologies often changes the strategic relevance of IT service to a firm.

The Expanding Scope of Vendor Options

- To buy professional services
- To buy a product
- To buy a transaction
- To use a systems integrator - project based
- Outsourcing - time based

Cost  Speed  Capacity  Quality  Reliability  Expertise
Products/Services

When to Outsourcing?

- Which IS activities are strategic to our company’s business?
- Will outsourcing save us at least 15 percent?
- Does our firm have access to the needed technology and expertise?
  - If not, outsourcing may be the answer to acquiring these resources.
- Does outsourcing increase our firm’s flexibility?

What Activities that Management should not Outsource?

- Strategy
- Policy role
- the decisions about when to introduce information systems into the organization
- the management of the vendor
- when the system (IS) department is well managed, and where IT is a core competency
Outsourcing Recommendations

• Write shorter contracts - less than 5 years
• Subcontract control
• Selective outsourcing

Outsourcing Drivers

<table>
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<tr>
<th>Outsourcing Drivers</th>
<th>Outsourcing Challenges</th>
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<td>Offer cost saving</td>
<td>Abdication of control</td>
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<td>Ease transition to new technologies</td>
<td>Lack of technology innovation</td>
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<td>Offer better ability to handle peaks</td>
<td>Mitigating outsourcing risks</td>
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<tr>
<td>Make it easier to consolidate data center</td>
<td>Ensuring cost savings while protecting quality</td>
</tr>
<tr>
<td>Provide a cash infusion</td>
<td>Working effectively with suppliers</td>
</tr>
</tbody>
</table>

Patterns of Market Exchange

The Trend is From …

• Vertical integration

Patterns of Market Exchange

The Trend is From …

• Selective sourcing
• Virtual corporation,
• Disintermediation of distribution and supply channels
• Outsourcing/Offshoring

Strategic Grid for Decisions on Outsourcing

<table>
<thead>
<tr>
<th>Strategic Importance</th>
<th>Competitive Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Y</td>
</tr>
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<td>Y</td>
<td>Insourcing (K-How to partners)</td>
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<td>N</td>
<td>Strategic Alliance</td>
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<td>Leverage</td>
</tr>
<tr>
<td>N</td>
<td>Outsourcing</td>
</tr>
</tbody>
</table>
Summary: Factors driving outsourcing

1. Cost savings
2. Qualified IT staff are difficult to find and retain
3. By bringing in outside expertise, management needs to focus less on IS operations and more on the information itself.
4. Outsourcers are specialists, should understand how to manage IS staff more effectively.
5. Outsourcers may have larger IS resources that provide greater capacity on demand.
6. Outsourcing can help a company overcome inertia to consolidate data centers that could not be consolidated by an internal group, or following a merger or acquisition.

Summary

- Firms typically face a range of sourcing decisions.
- Cost savings or filling the gaps in the organization’s IT skills are powerful drivers for outsourcing.
- Offshoring may be performed in a country that is proximate along one or a number of dimensions (nearshoring) or that is distant (farshoring).
- Different ways of outsourcing include cloud computing and crowdsourcing.
- Full or selective outsourcing offers organizations an alternative to keeping top-performing IS services in-house.