Managing and Using Information Systems: A Strategic Approach – Fifth Edition

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Chapter 9

Information Systems Sourcing

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WILEY
Publishers Since 1807

Learning Objectives

- Describe the Sourcing Decision Cycle Framework.
- Explain the differences between insourcing and outsourcing, inshoring and offshoring, and nearshoring and farshoring.
- 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.

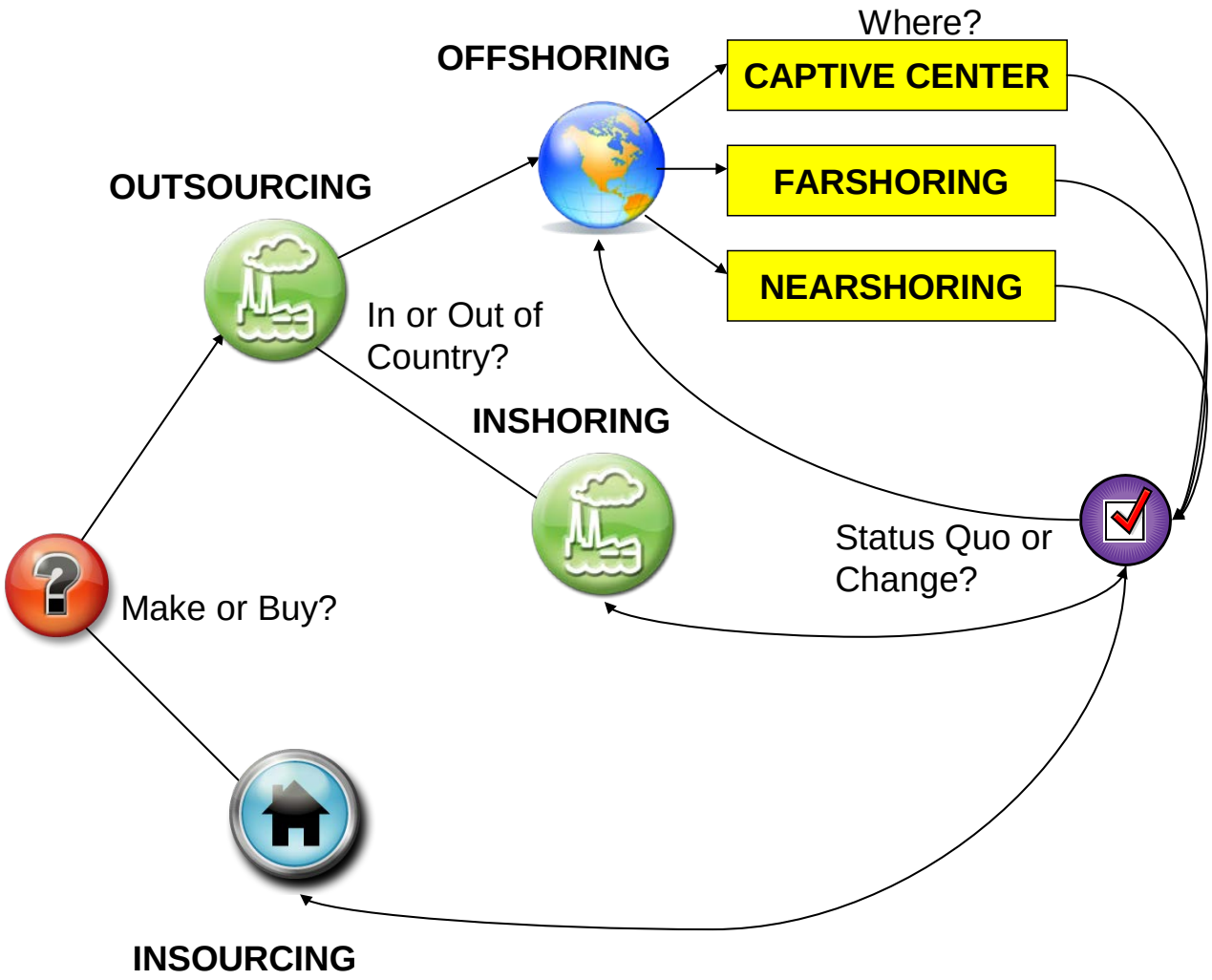
Real World Example (Cont.)

- Kellwood hired a third-party consultant.
- Backsourcing 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.

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.

Figure 9.1 Sourcing Decision Cycle Framework.



Starting the Cycle: Make or Buy Decision

- Managers decide whether to "**make**" or "**buy**" information services.
  - A "make" decision involves **insourcing** some or all of the infrastructure.
  - A "buy" decision involves **outsourcing**.

Insourcing

- Insourcing is when 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:
  - Keeping core competencies in-house.
  - IS service or product requires considerable security or confidentiality.
  - Time available in-house to complete IS projects.
  - In-house IT personnel.
- Challenges to **insourcing** (Figure 9.2):
  - Getting needed IT resources from management.
  - Finding a reliable, competent outsource provider.

Figure 9.2 Make or buy? Questions and risks.

"Make" or "Buy"	Suggests Insourcing	Suggests Outsourcing	Examples of Associated Risk in Worse Case Scenarios
Questions			
Does it involve a core competency?	Yes	No	*If outsourced:* Loss of control over strategic initiatives; loss of strategic focus
Does it involve confidential or sensitive IS services or software development?	Yes	No	*If outsourced:* Competitive secrets may be leaked
Is there enough time available to complete software development projects in-house?	Yes	No	*If insourced:* Project not completed on time
Do the in-house IS professionals have adequate training, experience, or skills to provide the service or develop the software?	Yes	No	*If outsourced:* Technological innovations limited to what provider offers; overreliance on provider's skills
Are there reliable outsourcing providers who are likely to stay in business for the duration of the contract?	No	Yes	*If outsourced:* Project not completed, or, if completed, project is over budget and late when another provider takes it over
Is there an outsourcing provider that has a culture and practices that are compatible with the client?	No	Yes	*If outsourced:* Conflict between client and provider personnel
Are there economies of scale that make it cheaper to provide the service or develop the software in-house?	Most Likely No	Most Likely Yes	*If outsourced:* Costs of project or operations becomes excessive because of the way the contract is written
Does it offer a better ability to handle peaks?	Most Likely No	Most Likely Yes	*If insourced:* Loss of business
Does it involve consolidating data centers?	Most Likely No	Most Likely Yes	*If insourced:* Inefficient operations

Outsourcing

- Outsourcing is the purchase of a good or service that previously was (or could be) provided internally but is now provided by outside vendors.
- 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.
- Outsourcing has expanded to include essential functions such as customer service and other aspects that provide competitive advantage.

Factors in the Outsourcing Decision

- Factors that lead to the decision to **outsource**:
  - Cost reduction achieved through economies of scale.
    - Achieved through centralized "greener" data centers, preferential contracts with suppliers, and large pools of technical expertise.
  - Need for help transitioning to new technologies through access to larger IT talent pools.
  - Ability to handle peaks in processing.
  - Consolidating data centers (e.g., following a merger or acquisition).
  - An infusion of cash from the sale of its equipment to the outsourcing vendor.

Additional Advantages for Outsourcing

- Distinct **advantages** for a product or service that is considered to be a commodity instead of a core competency:
  - Focusing management's attention on core activities.
  - Helping a company transition to new technologies.
  - Gaining access to larger pools of talent with more current knowledge of advancing technologies.
  - Helping implement technologies such as Enterprise 2.0, Web 2.0 tools, and ERP systems.
  - Knowing how to hire, manage, and retain IT staff.

Outsourcing Risks

- Opponents of outsourcing cite a considerable number of **risks** (Figure 9.2).
- A manager should consider each of these before making a decision about outsourcing.
- Each risk can be mitigated with effective planning and ongoing management.
- The client surrenders control over critical aspects of the enterprise.
  - Control of the project.
  - Scope creep.
  - Technologies.
  - Costs.
  - Financial controls.
  - Accuracy and clarity of financial reports.
  - The company's IS direction.

Additional Outsourcing Risks

- Additional outsourcing risks are:
  - Lack of adequate anticipation of new technological capabilities and their development potential when negotiating outsourcing contracts.
  - Contract terms may leave clients highly dependent on their providers.
  - Competitive secrets may be harder to keep.
  - Savings may never be realized.
  - Provider's culture or operations may be incompatible with the client's.
    - Conflicts between the client's staff and provider's staff may delay progress or hurt the quality of the service or product delivered.
  - Working with multiple vendors distributes to "best of breed" but requires more coordination efforts. May be a tendency to "**finger-point**."

Decisions about How to Outsource Successfully

- The decision about whether or not to outsource must be made with adequate care and deliberation.
- Requires numerous **other decisions** about mitigating outsourcing risks.
  - Three major decision areas: selection, contracting, and scope.

1. **Selection**
   - Focuses on finding compatible providers whose capabilities, managers, internal operations, and culture complement those of the client.
     - Compatibility and cultural fit may trump price.
2. **Contracting**
   - Many "**how**" decisions center around the outsourcing contract.
     - Ensure that contract terms allow flexibility to manage and, if necessary, sever supplier relationships.

Decisions about How to Outsource Successfully (Cont.)

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.

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.

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).

Figure 9.3 Trade-offs between outsourcing options.

"How" area	Cloud Computing	Onshoring	Offshoring
SELECTION			
Do not negotiate solely on price	x	x	x
Carefully evaluate your own company's capabilities	x	x	x
Thoroughly evaluate provider's capabilities	x	x	x
Choose provider with complementary capabilities	x	x	x
Be sure there is a technical fit	x	x	x
Be sure there is a cultural fit		x	x—especially critical based on national cultures
Be sure relationship produces net benefit	x	x	x
Select location to mitigate risk, reduce time zone differences and match culture			x

Figure 9.3 (Cont.)

"How" area	Cloud Computing	Onshoring	Offshoring
RELATIONSHIP/CONTRACTING			
Establish short-term contracts	x	x	x—fixed price if possible
Establish life cycle contracts that are broken into stages		x	x
Make contracts as tight as possible	x	x	x
Carefully define contracts when using multiple, "best of breed"	x	x	x
Develop skills in contract management	x	x	x
Hire legal experts (area noted)		x (outsourcing)	x (outsourcing, offshore laws)
Openly communicate sourcing strategy to all stakeholders to mitigate political risks			x
Elevate client organization's CMMI certification to close the process gap between client and provider			x
Negotiate CMMI processes that will not be paid for to save money			x
Manage bottlenecks to relieve substantial time zone differences			x
SCOPE			
Decide on full or selective outsourcing models	Usually Selective	Selective or Full	Usually Selective

Cloud Computing

- Cloud computing:
  - A third party provides IT services over the **Internet**.
  - Provides an entire data center's worth of servers, networking devices, systems management, security, storage, and other infrastructure.
- Clients buy the exact amount of storage, computing power, security, or other IT functions they need, when they need it, and pay only for what they use.
  - Cost saving.
- 24/7 access from multiple mobile devices.
  - High availability for large backup data storage.
  - Ease of use.

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.

Public Clouds Characteristics

- **Software as a Service** (SaaS) or **Application Service Provider** (ASP).
  - Software application functionality through a web browser.
  - The platform and infrastructure are fully managed by the cloud provider.
  - If the operating system or underlying service isn't configured correctly, the data at the higher application layer may be at risk.
  - The most widely known and used form of cloud computing.
- Some managers shy away from cloud computing because they are concerned about:
  - security—specifically about external threats from remote hackers and security breaches as the data travels to and from the cloud.
  - data privacy.

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).

Figure 9.4 Government involvement with offshoring.

Government actions to support offshoring	Government actions to protect against offshoring
Politicians in countries around the world are trying to create an environment so that their country can become "the next India." But India invested in a substantial infrastructure in human capital, telecommunications, and technology parks. Countries emulating India must lay a foundation in science and technology education, especially IT education. Offshoring is only possible if its key resource, the country's potential job pool, consists of highly skilled workers. Other actions that governments can take to make their countries more appealing to outsourcing clients are to give marketing assistance to offshore vendors, assist firms in attaining recognized standards of quality in the global marketplace, and promote collaborative efforts between the government, software companies, financial institutions, and universities. Governments can also offer specific incentives to companies that are considering their country as an offshoring destination. They can, for example reduce/eliminate various taxes or ease the bureaucratic process required for the company.	Politicians in countries such as the United States and United Kingdom where there have been large numbers of job losses attributed to jobs being moved offshore are turning to defensive legislative strategies. Government funding for education and training, health care insurance and pension portability, and unemployment-compensation programs for the displaced workers are being considered. To stem the outflow of lost jobs, the U.S. Congress proposed numerous federal laws ("bills") to restrict offshoring and to protect U.S. jobs by restricting the number of visas for people entering the country. It can do so according to the Commerce Clause of the U.S. Constitution. In addition, state legislatures including those of Arizona, California, Colorado, Florida, Illinois, Maryland, New Jersey, North Carolina, North Dakota, and Utah passed laws to restrain offshoring by more heavily regulating the "privatization" of state services. Because the number of contracts offered by state governments is limited, these "privatization" bills, if constitutional, may have little impact on offshoring. Nonetheless, lobbying efforts and public pressure to legislate against offshoring and for making the business dealings of publicly owned firms that engage in offshoring more transparent are likely to continue.

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.

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.

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 cultural differences.
  - Approximately 100 countries export software services and products.
  - 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.
    - trade issues.
    - data security.
    - intellectual property.
    - level of technical infrastructure available.

Offshore Destination-Development Tiers

Carmel and Tjia suggest that there are three tiers of software exporting nations:

- **Tier 1**: Mature.
  - 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.
- Tiers were determined based on industrial maturity, the extent of clustering of some critical mass of software enterprises, and export revenues.
- 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).

Figure 9.5 Sourcing options.

<table>
<tr><td rowspan="2">Insourcing (Firm provides IS services from internal group, developing and deploying products in-house)</td><td colspan="4">Outsourcing (products or services provide by outside vendors)</td></tr>
<tr><td rowspan="2">Cloud Computing (third party provides services over the Internet)</td><td rowspan="2">Onshoring (outsourcing work performed domestically)</td><td colspan="2">Offshoring (outsourcing work performed in distant country)</td></tr>
<tr><td>Nearshoring (at a country nearby)</td><td>Farshoring (at a country further away, usually India, China or Eastern block countries)</td></tr>
<tr><td colspan="5">Captive Center (a subsidiary of the firm, but located offshore to take advantage of economic and resource benefits of foreign country)</td></tr>
</table>

Chapter 9 - Key Terms

Application service provider (ASP) (p. 273) - provides software application functionality through a web browser.

Backsourcing (p. 281) - 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.

Captive center (p. 278) - an overseas subsidiary that is set up to serve the parent company.

Cloud computing (p. 272) - the dynamic provisioning of third party-provided IT services over the Internet.

Chapter 9 - Key Terms (Cont.)

Farshoring (p. 277) - 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).

Full outsourcing (p. 270) - implies that an enterprise outsources all its IS functions from desktop services to software development.

Insourcing (p. 264) - a firm provides IS services or develops IS in its own in-house IS organization.

Onshoring (p. 274) - also called inshoring, is performing outsourcing work domestically.

Nearshoring (p. 278) - work is sourced to a foreign, lower-wage country that is relatively close in distance or time zones.

Chapter 9 - Key Terms (Cont.)

Offshoring (outsourcing offshore) (p. 275) - the IS organization uses contractor services or even builds its own data center in a distant land.

Outsourcing (p. 264) - the purchase of a good or service that previously was (or could be) provided internally but is now provided by outside vendors.

Selective outsourcing (p. 270) - an enterprise chooses which IT capabilities to retain in house and which to give to an outsider.

Service level agreement (p. 264) - formal service contract between clients and outsourcing providers that describes the level of service including uptime, response time, availability, performance, and network latency.

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