Preparation for Software Outsourcing and Offshoring

Peter Kolb
Objectives

This module will enable the participant to:

Prepare a decision basis for software outsourcing and offshoring.
Content

- Categories for Software Outsourcing
- Strategy for Outsourcing
- Gartner Cost Model for Software Outsourcing
- Summary
IT Outsourcing Categories (Gartner)

- Business process outsourcing (BPO):
  - Transaction Management Services
  - Transaction Processing Services
  - Human Resource and Payroll Services
  - Finance and Accounting Services (billing, payment)
  - Operations Management Services
  - Call Center Services

- Application development and maintenance (ADM)

- Infrastructure Services
  - Data Center Services
  - Network Services
  - Desktop Services
  - Helpdesk Services
  - Asset Management Services
  - Security Management Services
  - Storage Services
Content

- Categories for Software Outsourcing
- Strategy and Decision for Outsourcing
- Gartner Cost Model for Software Outsourcing
- Summary
Analysis of Business

- What Business are you in? What are the drivers?
- What is your differentiator?
- Which competence is key to your business?
Strategic Approach to Application Outsourcing

- Application outsourcing strategies
  - Technical issues
    - Improve service levels to end users
    - Access to critical technical skills and resources
    - Upgrade applications quality, processes and methods
  - Business issues
    - Reduce cost
    - Ensure scalability of resources to business needs
    - Focus on core business

- Medium size enterprises act more tactical than large enterprises:
  - 40% seek intermediate results/benefits through outsourcing (compared to 30% in large enterprises)
  - 60% look for long-term payback (compared to 70% in large enterprises)

Source:
Gartner, 2003
Identify Candidates for Software Outsourcing

- Unique
  - ERP integration
  - Report creation
- Repeatable
  - Migration from legacy systems
  - Well specified requirements

<table>
<thead>
<tr>
<th>Unique</th>
<th>Repeatable</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERP integration</td>
<td>Migration from legacy systems</td>
</tr>
<tr>
<td>Report creation</td>
<td>Well specified requirements</td>
</tr>
</tbody>
</table>

- User interface design
- Prototype systems
- Application management
- Customization of products

Level of user interaction:
- Low
- High
Application Outsourcing Inhibitors

- Top three inhibitors to outsource
  - High costs associated with outsourcing
  - Security issues
  - Cost savings not realized

- Top fear
  - Loss of control and cost guarantees

- Other things to consider
  - Cultural differences, language
  - Geopolitical and social instability
  - Intellectual property protection
  - Loss of technical expertise and business knowledge

Source:
Gartner, 2003
Vendor Selection

- Identification of Outsourcing Candidates
  - Recommendations 63%
  - Past direct relationships 57%
  - Presence at industry conferences 40%

- Vendor Selection Criteria
  - Quality and Cost

- Decision makers
  - Medium size enterprises: IT Managers
  - Large enterprises: group of CIO, IT manager, BU manager, procurement officer

Source:
Gartner, 2003
Content

- Categories for Software Outsourcing
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Typical questions when searching best resources for a project:

- Should the enterprise use its own staff or the staff of an external service provider (ESP)?

- Should the staff be located on-site (co-located with the enterprise users), off-site (in the same country) or offshore?

- If offshore, in what countries?
In search of cost-efficiency of software sourcing, you need to answer to the following questions:

- Why shouldn't they simply select the ESPs with the lowest billing rates?

- Do off-site/offshore development realities, like
  — geographical distances,
  — time-zone differences
  — electronic, rather than face-to-face communication — complicate and, thus, result in less-cost-effective software outsourcing? And if so, to what degree?

- Can domestic ESPs successfully compete against foreign ESPs from countries with lower (often much lower) billing rates than are available in your western country?
Driving Inputs to the Application Development Outsourcing Cost Model

AD Sourcing Cost Model

Project Sourcing Cost Factors
- AD Project Phases Factor
- Billing Rates Factor
- Efforts on a Phase Factor
- Additional Project Costs Factor

Project Sourcing Cost Adjustment Factors
- Effectiveness Factor
- Communication Factor
- External/Market Adjustment Factor

- Technology Expertise Parameter
- Language Parameter
- Project Management Expertise Parameter
- Collaboration Parameter
- Business Domain Expertise Parameter
### The Application Development Outsourcing Cost Model: Realistic Expectations

#### Saving Factors

- **Billing Rates as Saving Factor**  
  (billing and cost of labor in units relative to 1.0):
  
<table>
<thead>
<tr>
<th>Type</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. enterprise</td>
<td>1.0</td>
</tr>
<tr>
<td>In-sourced</td>
<td>1.0</td>
</tr>
<tr>
<td>Offshore</td>
<td>0.3</td>
</tr>
</tbody>
</table>

- **Effectiveness factor**  
  (expertise in development, project management and business domain):
  
<table>
<thead>
<tr>
<th>Type</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. enterprise</td>
<td>0.46</td>
</tr>
<tr>
<td>Average U.S. ESP</td>
<td>0.74</td>
</tr>
<tr>
<td>Offshore ESP</td>
<td>0.70</td>
</tr>
</tbody>
</table>

#### Additional Cost Factors

- **Communication factor**  
  (complexity of conducting off-site / offshore development):
  
<table>
<thead>
<tr>
<th>Type</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. enterprise</td>
<td>0.95</td>
</tr>
<tr>
<td>U.S. ESP</td>
<td>0.87</td>
</tr>
<tr>
<td>Indian In-sourced</td>
<td>0.78</td>
</tr>
<tr>
<td>Offshore</td>
<td>0.46</td>
</tr>
</tbody>
</table>
Example:

<table>
<thead>
<tr>
<th>Off-site (% of phase's efforts)</th>
<th>0%</th>
<th>40%</th>
<th>70%</th>
<th>70%</th>
<th>20%</th>
<th>0%</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff (full-time equivalents)</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>37</td>
</tr>
<tr>
<td>Time (months)</td>
<td>2.5</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>23.5</td>
</tr>
</tbody>
</table>

Allocation of Efforts Across Phases (man-months = staff x time):

<table>
<thead>
<tr>
<th>Allocation of Efforts Across Phases (%)</th>
<th>10%</th>
<th>21%</th>
<th>33%</th>
<th>13%</th>
<th>12%</th>
<th>10%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation of Off-Site Efforts Across Phases (man-months = efforts on a phase x off-site %)</td>
<td>0%</td>
<td>12.8</td>
<td>34.3</td>
<td>14</td>
<td>3.6</td>
<td>0</td>
<td>64.7</td>
</tr>
<tr>
<td>Allocation of Off-Site Efforts Across Phases</td>
<td>0%</td>
<td>9%</td>
<td>23%</td>
<td>9%</td>
<td>2%</td>
<td>0%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Allocation of On-Site Efforts Across Phases (man-months = efforts on a phase x on-site %):

<table>
<thead>
<tr>
<th>Allocation of On-Site Efforts Across Phases</th>
<th>10%</th>
<th>13%</th>
<th>10%</th>
<th>4%</th>
<th>10%</th>
<th>10%</th>
<th>57%</th>
</tr>
</thead>
</table>
Adjustment Factors Used in the Project Example

Choices for the Off-Site Part of Project:

<table>
<thead>
<tr>
<th></th>
<th>U.S. enterprise (reference)</th>
<th>Indian ESP on-site</th>
<th>Indian ESP off-site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billing rates</td>
<td>1.0</td>
<td>0.95</td>
<td>0.3</td>
</tr>
<tr>
<td>Effectiveness factor</td>
<td>0.46</td>
<td>0.70</td>
<td>0.70</td>
</tr>
<tr>
<td>Communic. factor</td>
<td>0.95</td>
<td>0.78</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Calculated Savings = Difference between cost of ESP and U.S. enterprise for executing the same project part.
The Realistic Picture of Savings

Savings = Cost of AD by ESP - Cost of AD by Enterprise

<table>
<thead>
<tr>
<th>Percentage of Construction and Unit Test Efforts Conducted Offshore</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>24%</td>
</tr>
<tr>
<td>10%</td>
<td>26%</td>
</tr>
<tr>
<td>20%</td>
<td>28%</td>
</tr>
<tr>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>40%</td>
<td>32%</td>
</tr>
<tr>
<td>50%</td>
<td>33%</td>
</tr>
<tr>
<td>60%</td>
<td>35%</td>
</tr>
<tr>
<td>70%</td>
<td>37%</td>
</tr>
<tr>
<td>80%</td>
<td>39%</td>
</tr>
<tr>
<td>90%</td>
<td>41%</td>
</tr>
<tr>
<td>100%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Project part fully executed off-site by an Indian ESP

Cost of labor ratio = enterprise's fully loaded cost of labor/ESP developer's offshore billing rate

<table>
<thead>
<tr>
<th>Cost of the project if executed by an enterprise</th>
<th>Savings if executed by an offshore ESP</th>
<th>Cost of the project if executed by an ESP</th>
<th>Project cost ratio = cost if executed by an enterprise/ cost if executed by an ESP</th>
<th>Cost of labor ratio = enterprise's fully loaded cost of labor/ESP developer's offshore billing rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 percent</td>
<td>43 percent</td>
<td>100 percent - 43 percent = 57 percent</td>
<td>100 percent/57 = <strong>1.75 times</strong> less expensive to execute with an ESP than to develop on its own</td>
<td>ESP's offshore billing rate is <strong>three</strong> times lower than a U.S. developer's fully loaded cost of labor</td>
</tr>
</tbody>
</table>
## Comparison of Using an U.S. ESP

### Choices for the Off-Site Part of Project:

<table>
<thead>
<tr>
<th></th>
<th>U.S. enterprise (reference)</th>
<th>U.S. ESP on-site</th>
<th>U.S. ESP off-site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billing rates</td>
<td>— 1.0</td>
<td>— 1.2</td>
<td>— 0.9</td>
</tr>
<tr>
<td>Effectiveness factor</td>
<td>— 0.46</td>
<td>— 0.74</td>
<td>— 0.74</td>
</tr>
<tr>
<td>Communic. factor</td>
<td>— 0.95</td>
<td>— 0.95</td>
<td>— 0.87</td>
</tr>
</tbody>
</table>

$$\text{Savings} = \text{Cost of AD by ESP} - \text{Cost of AD by Enterprise}$$

- **U.S. ESP on-site**: 27%
- **U.S. ESP off-site**: 33%

Project part fully executed off-site by an U.S. ESP off-site.
How Effectiveness Compensates for High Billing Rates

Outsourcing to India

<table>
<thead>
<tr>
<th>Effectiveness</th>
<th>India</th>
<th>U.S.</th>
<th>U.S.</th>
<th>U.S.</th>
<th>U.S.</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.70</td>
<td>25%</td>
<td>0.74</td>
<td>0.87</td>
<td>0.95</td>
<td>0.99</td>
<td>0.95</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Billing Rate</th>
<th>On-site</th>
<th>U.S.</th>
<th>U.S.</th>
<th>U.S.</th>
<th>U.S.</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>1.2</td>
<td>1.2</td>
<td>1.3</td>
<td>1.4</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>0.3</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td></td>
</tr>
</tbody>
</table>

Increased effectiveness in western countries can outrange cheap labor cost in India.

Outsourcing within the U.S.
How to Become More Effective?

- Technical Improvements
  - IT education – increase percentage of developers with formal IT education
  - Software certification – have certified developers, e.g. in Microsoft technologies, Java, …
  - IT training – systematically train your people to keep them up to date

- Process Improvement
  - Follow the (software) process improvement models (CMMI, Spice, …)

- Management Improvement
  - Project leader training
  - Introduction and certification of new roles: configuration manager, quality manager