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
Offshoring Growth by Type of Service

![Graph showing growth in offshoring market by type of service]

**Application development**
- 35% in 2006

**BPO**
- 5% in 2006

**Infrastructure**
- 3% in 2007

Ramp-up phase

1. Limited to India; BPO = business process outsourcing.
2. Includes labor portion only (~50% of total infrastructure-offshoring market).
3. Estimated.

Source: McKinsey, Quarterly 2005, Number 3 «Sizing the emerging global labor market»
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
## Reasons for IT Offshoring

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of internal technical expertise</td>
<td>48%</td>
</tr>
<tr>
<td>To reduce costs</td>
<td>42%</td>
</tr>
<tr>
<td>To provide a better/faster service</td>
<td>34%</td>
</tr>
<tr>
<td>To reduce IT risk</td>
<td>30%</td>
</tr>
<tr>
<td>To ensure fixed/known costs</td>
<td>27%</td>
</tr>
<tr>
<td>Company strategy</td>
<td>26%</td>
</tr>
<tr>
<td>Internal politics</td>
<td>11%</td>
</tr>
<tr>
<td>Other reasons</td>
<td>7%</td>
</tr>
<tr>
<td>We do not outsource any IT services</td>
<td>24%</td>
</tr>
</tbody>
</table>

*Source: ITGI / Lighthouse, «Global Survey 2004»*
Identify Candidates for Software Outsourcing

Task features

Unique

Repeatable

Level of user interaction

Low

High

ERP integration

Report creation

Migration from legacy systems

Well specified requirements

User interface design

Prototype systems

Application management

Customization of products
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
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
Content

- Categories for Software Outsourcing
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- Summary
The Application Development Outsourcing Cost Model

- 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?
The Application Development Outsourcing Cost Model

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
    - Efforts on a Phase Factor
    - Billing Rates 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): 
  - U.S. enterprise — 1.0 (reference)
  - In-sourced — 1.0 (Indian ESP working in the U.S.)
  - Offshore — 0.3 (Indian ESP support from India)

- **Effectiveness factor**
  (expertise in development, project management and business domain): 
  - U.S. enterprise — 0.46
  - Average U.S. ESP — 0.74
  - Offshore ESP — 0.70 (typical for most Indian ESP)

### Additional Cost Factors

- **Communication factor**
  (complexity of conducting off-site / offshore development): 
  - U.S. enterprise — 0.95 (= or U.S. ESP in-sourced)
  - U.S. ESP — 0.87 (U.S. ESP working off-site)
  - Indian In-sourced — 0.78 (Indian ESP working in the U.S.)
  - Offshore — 0.46 (Indian ESP supports from India)
Example:

### On-site (% of phase’s efforts)

- Analysis: 100%
- Design: 60%
- Construction: 30%
- Unit Test: 80%
- Deployment: 100%

### Off-site (% of phase’s efforts)

<table>
<thead>
<tr>
<th>Staff (full-time equivalents)</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>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)
  - 15
  - 32
  - 49
  - 20
  - 18
  - 15
  - 149

#### Allocation of Efforts Across Phases (%)

- 10%
- 21%
- 33%
- 13%
- 12%
- 10%
- 100%

#### Allocation of Off-Site Efforts Across Phases

- (man-months = efforts on a phase x off-site %)
  - 0
  - 12.8
  - 34.3
  - 14
  - 3.6
  - 0
  - 64.7

#### Allocation of Off-Site Efforts Across Phases

- 0%
- 9%
- 23%
- 9%
- 2%
- 0%
- 43%

#### Allocation of On-Site Efforts Across Phases

- (man-months = efforts on a phase x on-site %)
  - 15
  - 19.2
  - 14.7
  - 6
  - 14.4
  - 15
  - 84.3

#### Allocation of On-Site Efforts Across Phases

- 10%
- 13%
- 10%
- 4%
- 10%
- 10%
- 57%
## 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

Indian ESP on-site

<table>
<thead>
<tr>
<th>Percentage of Construction and Unit Test Efforts Conducted Offshore</th>
<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 = 1.75 times less expensive to execute with an ESP than to develop on its own</td>
<td>ESP's offshore billing rate is three times lower than a U.S. developer's fully loaded cost of labor</td>
<td></td>
</tr>
</tbody>
</table>

Project part fully executed off-site by an Indian ESP
Comparison of Using an U.S. ESP

<table>
<thead>
<tr>
<th>Choices for the Off-Site Part of Project:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S. enterprise</strong> (reference)</td>
</tr>
<tr>
<td>- Billing rates — 1.0</td>
</tr>
<tr>
<td>- Effectiveness factor — 0.46</td>
</tr>
<tr>
<td>- Communic. factor — 0.95</td>
</tr>
<tr>
<td><strong>U.S. ESP on-site</strong></td>
</tr>
<tr>
<td>- Billing rates — 1.2</td>
</tr>
<tr>
<td>- Effectiveness factor — 0.74</td>
</tr>
<tr>
<td>- Communic. factor — 0.95</td>
</tr>
<tr>
<td><strong>U.S. ESP off-site</strong></td>
</tr>
<tr>
<td>- Billing rates — 0.9</td>
</tr>
<tr>
<td>- Effectiveness factor — 0.74</td>
</tr>
<tr>
<td>- Communic. factor — 0.87</td>
</tr>
</tbody>
</table>

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

- U.S. ESP on-site
  - Savings: 27%

- Project part fully executed off-site by an U.S. ESP off-site

Percentage of Construction and Unit Test Efforts Conducted Offshore

33%
## Example: Typical Split in IT Offshoring Projects

### Development

<table>
<thead>
<tr>
<th>Split in Phase</th>
<th>By Bank</th>
<th>Project Phase</th>
<th>By Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
<td>90% Setup</td>
<td>10% Detailed Design</td>
<td>65%</td>
</tr>
<tr>
<td>8%</td>
<td>90% Initialization</td>
<td>10% Build</td>
<td>80%</td>
</tr>
<tr>
<td>15%</td>
<td>70% System Design</td>
<td>20% Assembly Test</td>
<td>80%</td>
</tr>
<tr>
<td>15%</td>
<td>30% Integr. Test</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td>70% Accept. Test</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td>80% Deployment</td>
<td>15% Enhancements</td>
<td>60%</td>
</tr>
<tr>
<td>40%</td>
<td>30% Technical Upgrades</td>
<td>10% Performance Tuning</td>
<td>70%</td>
</tr>
<tr>
<td>10%</td>
<td>20% Fix on Fail</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td>30%</td>
<td>10%</td>
<td></td>
</tr>
</tbody>
</table>

### Maintenance

<table>
<thead>
<tr>
<th>Standard split of work</th>
<th>35/65 for Software Development</th>
<th>Provider onsite/offshore: 25/75</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28/72 for Maintenance</td>
<td>Provider onsite/offshore: 15/85</td>
</tr>
</tbody>
</table>

**Legend:**
- **Inhouse**
- **Onsite**
- **Offsite**
# How Effectiveness Compensates for High Billing Rates

<table>
<thead>
<tr>
<th>Savings</th>
<th>India</th>
<th>U.S. 1</th>
<th>U.S. 2</th>
<th>U.S. 3</th>
<th>U.S. 4</th>
<th>U.S. 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>37%</td>
<td>25%</td>
<td>37%</td>
<td>37%</td>
<td>37%</td>
<td>31%</td>
<td></td>
</tr>
</tbody>
</table>

## Outsourcing to India

### Effectiveness

<table>
<thead>
<tr>
<th></th>
<th>0.70</th>
<th>0.74</th>
<th>0.87</th>
<th>0.95</th>
<th>0.99</th>
<th>0.95</th>
</tr>
</thead>
</table>

### Billing Rate

<table>
<thead>
<tr>
<th></th>
<th>On-site</th>
<th>1.2</th>
<th>1.2</th>
<th>1.3</th>
<th>1.4</th>
<th>1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Off-site</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
</tr>
</tbody>
</table>

---

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

**Outsourcing within the U.S.**
Offshoring Potential in the IT Services Sector is max. 44% of the Employment Demand

A maximum of ~44% of the employment demand in the IT services sector is globally resourceable, translating into a theoretical maximum of ~3,030,000 FTEs by 2008

- The maximum degree of global resourcing in the IT services sector is ~44% due to the high degree of customer interaction in consulting, system integration, and IT outsourcing.
- However, 44% represents the second highest global resourcing potential of all sectors studied.
- In 2006, this would translate into an employment demand maximum of ~3,030,000 FTEs that could theoretically be located anywhere in the world.
- Primary opportunities are custom application development & application maintenance ("the Indian domain") as well as parts of system integration (development, testing) and IT outsourcing (network); to a lesser extent also internal IT and back-office functions.

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