The Global Delivery of Information Technology and Business Services:

Workforce Management and Policy Implications

Symposium Co-Chairs:

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Introduction

Global sourcing of IT and business services has grown dramatically but is not always effective

This symposium explores:

1. What services can be effectively offshored (Ravi Aron)
2. Whether capability models improve offshore service delivery performance (Chris Forman)
3. How innovation can be fostered in global service delivery (Natalia Levina)

Symposium Format
Complexity Arbitrage & Offshore Outsourcing

Ravi Aron
Co-Authors
Siddarth Jayanty
Ying Liu
Praveen Pathak
Domain Expertise, Experience & The Nature Of Work

Much of the work that takes place in a bank, an insurance company, a HMO, a brokerage is information work. This work consists of two kinds of tasks:

- Tasks that have low analytical structure, i.e.,:
  - Judgment, interpretation
  - Persuasion, communication
  - Context sensing and disambiguation

- Tasks that carry a high degree of analytical structure, i.e.,:
  - Computation, Quantitative analysis
  - Statistical analysis and testing,
  - Mathematical formulation and number crunching

The former is unstructured work calling for human judgment while the latter kind of work is highly structured and requires expertise based on ‘codifiable’ rules.

The first kind of work calls for **Domain Experience** while the second set calls for **Domain Expertise**.
Complexity & Structured Work

When you ask senior managers to rate the complexity of work that they execute you get very different estimates of complexity.

Managers in the US and UK generally rate work that requires quantitative / computational analysis, mathematical formulation and number crunching, algorithmic analysis as highly complex while they rate persuasion, communication, interpretation and judgment as comparatively of lower complexity.

Managers in China, India and Singapore provide almost directly opposite ratings of work complexity.
### Process Complexity Is Subjective

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<th>Service</th>
<th>Chinese BPO Firms</th>
<th>Mauritius BPO Firms</th>
<th>Indian BPO Firms</th>
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The Market for Complexity Arbitrage

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<tr>
<th></th>
<th>Mauritius BPO</th>
<th>Indian BPO</th>
<th>Singaporean BPO</th>
<th>UK Firms</th>
<th>US Firms</th>
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<tr>
<td>Indian BPO</td>
<td>87.8%</td>
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<td>Singaporean BPO</td>
<td>82.1%</td>
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<tr>
<td>UK Firms</td>
<td>-71.8%</td>
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<tr>
<td>US Firms</td>
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<td>86.1%</td>
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<td>Structured Work Index</td>
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<td>-95.7%</td>
<td>-89.7%</td>
<td>75.0%</td>
<td>63.9%</td>
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Clearly what drives this divergence in perception of complexity is the extent to which work is characterized by **analytical structure**.
Complexity & Productivity

Processes vary greatly in the nature of work required to execute them:

• It is difficult to compare absolute productivity gains made in executing different processes given the wide variance in process types

We defined instead a relative measure:

• Factor Productivity of Labor (for each process): Initial Volume of Output / Labor = \( \frac{V_1}{L_1} \)

• The ‘productivity gain’ over time that we measure for a process for the jth month therefore is:

\[
\frac{V_j}{L_j} \div \frac{V_1}{L_1}
\]

Initial results suggest that the higher the process complexity, the greater the gains from productivity.
# Productivity of Offshore Firms and Process Complexity

<table>
<thead>
<tr>
<th>Process Complexity</th>
<th>Average Productivity Gain over 16 month period</th>
<th>Average Productivity Gain Annualized</th>
<th>Co-Efficient of Variation</th>
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<tr>
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<td>6.9%</td>
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<td>12.44%</td>
<td>9.4%</td>
<td>49.8%</td>
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Complexity & Operational Risk

Operational risk arises when mistakes are made in the production of processes.

• The output has errors reflecting the extent of operational risk associated with a process

We calculated the Operational Error Rate (Aggregate Equivalent Error Rate) across the different regions for each complexity level:

• For processes of low to moderate complexity, US and UK and outperform the offshore firms
• For processes of highest complexity levels, offshore firms outperform US & UK firms
## Process Complexity & Operational Errors

<table>
<thead>
<tr>
<th>Process Complexity</th>
<th>Chinese BPO Firms</th>
<th>Mauritius BPO Firms</th>
<th>Indian BPO Firms</th>
<th>Singaporean BPO Firms</th>
<th>UK (Client) Firms</th>
<th>US (Client) Firms</th>
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Complexity & Operational Risk: Comparing Error Rates of Offshore Firms & their Western Clients

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<tr>
<th>Process Complexity</th>
<th>Offshore Firms</th>
<th>UK Firms</th>
<th>US Firms</th>
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The above error rates are weighted by process volume.
Takeaways

The nature and extent of complexity associated with work is highly subjective.

Work that western firms rate as ‘high complexity’ work can often be done with minimal risk offshore.
  • Such work calls for Domain Expertise and not much Domain Experience

Work that western firms rate as ‘low complexity’ work often calls for Domain Experience and is not easily executed offshore.

The demand for workers that have a combination of Domain Experience and Domain Expertise, to do work that is quasi structured, increases in firms after they offshored structured work.
Innovation in work practices and performance in global service delivery

Bryon Balint
Tepper School of Business, Carnegie Mellon University

Chris Forman and Sandra Slaughter
College of Management, Georgia Institute of Technology

Elaine Hyder and Mark Paulk
IT Services Qualification Center (ITSqc), Carnegie Mellon University
What is eSourcing?
Research Motivation

Sourcing relationships are often fraught with problems due to poor service definition, poor management, etc.

Capability models can provide a common set of practices, methods or technologies for service delivery, improving performance
Sourcing Best Practices - eSCM-SP

eSourcing Capability Model for Service Providers (eSCM-SP)

- Developed by Carnegie Mellon University and a consortium of companies
- 84 best practices associated with IT-enabled sourcing
- Covers entire sourcing life-cycle
Performance benefits of new work practices

Despite the growth in services sourcing, firms continue to search for innovations that will lower costs or enhance service delivery.

Implementation of quality models like the eSCM-SP can improve service delivery through improved process structure.

However the benefits of process structure may depend upon the nature of the work performed.

Hypotheses

Process structure will have a positive impact on service delivery performance

The beneficial effects of process structure will be less for outsourced tasks that are:

• Highly variable
• Highly interdependent
Research Setting

A major eSourcing service provider with global management consulting, technology services and outsourcing

Earned more than U.S. $16 billion net revenues in 2006

Employs almost 150,000 employees in 50 countries

Covers more than 30 industries and 75 countries
Research Method, Data and Analysis

Field Study of eSCM-SP implementation:
  • 74 Separate Practices
  • 8 implementation teams
  • 2 implementations (Human Resources, Financial Services)
  • Implementations over a 2 year time period

Data:
  • Archival data on eSCM-SP implementation, assessment and service delivery performance by practice and business line
  • Interviews with key informants

Analyses:
  • Fixed and random effects panel data analyses
Regression Model

\[ \text{Performance}_{ijt} = \beta_1 + \beta_2 \text{Structure}_{ijt} \times \text{MetricType}_{ij} + \beta_3 \text{Variability}_{ij} \times \text{MetricType}_{ij} + \beta_4 \text{Interdependence}_{ij} \times \text{MetricType}_{ij} + \beta_5 \text{Structure}_{ijt} \times \text{Variability}_{ij} \times \text{MetricType}_{ij} + \beta_6 \text{Structure}_{ijt} \times \text{Interdependence} \times \text{MetricType}_{ij} + \delta \text{MetricType}_{ij} + \gamma \text{BusinessLine}_{ij} + \mu_{ij} + \epsilon_{ijt} \]

Examine performance benefits of structure in business line \( i \), metric \( j \), and time period \( t \).

Random effects (GLS) model.
Process structure improves performance, more so for less variable tasks

![Graph showing the relationship between task variability and performance, with lines for Status, Cost, Quality, and Baseline.](graph.png)
Process structure improves performance, more so for less interdependent tasks

![Graph showing the relationship between performance, task interdependence, status, cost, quality, and baseline.](image-url)
Summary of results

Effect of structure on performance is positive and significant
+17.0% for Status
+2.3% for Cost
+2.9% for Quality

While structure creates the greatest improvements in status-related tasks, both variability and interdependence significantly weaken these improvements.
Conclusions

Process improvement frameworks like the eSCM-SP can play a role in improving service delivery

eSCM-SP Practices may be especially beneficial for offshored work that is more standardized or more modular

eSCM-SP Practices appear to increase certain service delivery performance outcomes more than others
Enabling and Growing IT Middle Managers for Leading Innovation in Global Sourcing*

Natalia Levina
New York University
Stern School of Business

*Funded by Alfred P. Sloan Industry Studies Fellowship
Sources of Innovation in Global Sourcing

Continuous discovery of best-fit suppliers (Dyer & Singh, 1998; Fine 1998)

Processes that enable integration of knowledge across boundaries (Leonard & Swap, 1999; Hargadon & Sutton, 1997)
Effective Collaboration across Boundaries

**Effective Collaboration =**
A process of achieving a synergistic combination of diverse expertise, while balancing each party’s interests
Achieving Effective Collaboration

Joint practices, interests, and identities help enable effective collaboration (Hardy et al., 2005; Levina and Vaast 2005)

Status differences inhibit effective collaboration (Metiu 2006, Levina 2005)
  • Particularly pronounced offshore

=> “We just salute and do what the client asks us to do”
Data

May 05 – May 06

In depth case study of a large global financial services firm “Global Bank”

Interviews with US and European “client” representatives and with 6 service providers’ personnel in India and Russia

• 74 interviews to date

Over 40 “high-end” IS development projects with 6 providers analyzed

Some projects delivering high degree of innovation, others failing to deliver at all
Global Bank: Extreme Multisourcing

- 2 Global Vendors
- European Onshore Vendors
- European Nearshore Vendors
- Inhouse Development
- Primary Russian Vendor
- Russian Captive
- Several Small E. European Vendors
- Global Vendor
- Nearshore Vendor
- Specialized Onshore Vendors
- In-house Development
- Global Vendors Branch in China
- P.I.V.
- Indian Captive
- 2 Additional Indian Vendors
- 2 Global Vendors in India
Middle Managers’ Roles

Discovering new supply markets and suppliers

Building supplier relationships and fostering innovation on projects
Discovering New Suppliers

Program managers acted as entrepreneurs seeking out opportunities in a turbulent business environment

- They had their own financing and internal clients
- They could choose the best fitting provider
- They had to invest into the relationship building
- Their sourcing effectiveness impacted their rewards
Contributors to Status Differences

Offshore developers initially lacked:

Competencies
• Industry knowledge, client’s systems’ knowledge, etc.

Economic Resources
• Dependence on onshore for money and technology

Social Network Ties
• Access to business users and senior IT managers

Symbolic Authority
• They were rarely asked to judge outcomes
• Some offshore cultures promoted status inequality
Program managers shared important resources to overcome status differences

Treated service providers as equals and taught others to do the same
Taught providers competencies they were missing and allowed access to business users
Facilitated frequent travel in both directions
Used technology to create and share artifacts
Evangelize success and offshored increasingly more challenging work
Using hiring, retention, and promotion practices to promote a creative dialogue
Discussion