IT Off-Shoring in Armenia

Best Practices For Diaspora ICT Operations

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This presentation explores the parameters for successful off-shoring of US or EU based Information and Communication Technology (ICT) operations to the Republic of Armenia. We focus on the business requirements of a) the organization supplying the work, and b) the work being off-shored.

Outline

- **Definitions:**
  - **Outsourcing**
  - **Off-Shoring**
- **Motivations**
- **Requirements**
- **Examples**
- **Cost Models**
- **Summary**

This is the presentation outline. We define the benefits and role of off-shoring in business operations. We also describe the requirements that candidate tasks must meet before off-shoring can be possible and profitable.

We propose three candidate examples of off-shoring. All three use high-tech ICT as a basis, but one is not a high-tech service *per se*. We also examine the per-employee cost for Armenia vs. US operations and summarize our findings.

Definitions

- **Outsourcing**
  - **Performance of an internal business process by an external organization**
  - **Customers see no division between parties**
  - **Work of external party is a straight expense: no payroll taxes, depreciation, and so on**

- **Off-shoring**
  - **Ibid. with a geographically disparate partner**
  - **Cultural and legal factors must be considered**
  - **Main result of globalization**

Outsourcing and off-shoring are closely related. We consider the former to be a subset of the latter, meaning off-shoring is a more complex instance of outsourcing incorporating geographic separation.

This subtle distinction is important for the following reason: if a company is not successful performing outsourcing with local, external organizations, then moving to off-shoring is introducing more complexity into an unproven system. However if a business is successfully using outsourcing, for example hiring a contractor to perform work during peak periods, then off-shoring can also be successful for this same business.

Motivations

- **Why off-shore?**
  - **Reduce expenses without reducing quality**
  - **Provide affordable but specialized service**
  - **In-house staff focuses on creative, sales**

- **Why Armenia?**
  - **INDRA market (INDia, Russia, aRAbia)**
  - **Cost among lowest in region**
  - **CIS languages spoken, understood**
  - **Constitutional freedom to perform any act unless specifically illegal**

Off-shoring has several benefits, but a key one is allowing the the host staff to focus on higher-value, business specific tasks. For example creative services or sales are functions that require market specific experience and training. Other tasks that do not require local domain knowledge can be successfully outsourced.

Armenia has some benefits unique in the INDRA region. First, low final cost compared to other countries: businesses looking to do work in Arabia, India, or Russia should consider setting up "base camp" in Armenia.

Armenia also has a prohibitive legal system: one is allowed to do what is not specifically prohibited. This is the same model as the US system, and different from most INDRA nations.

Requirements

- **80/20 Rule**
- **Process Oriented Work Flow**
- **Automated Quality Control**
- **Internet Product Delivery**

Successful off-shoring in Armenia has several requirements: work should be something that is repeatable, work must follow a process, quality control must be enforced, and shipping a physical product should not be required.

80/20 Rule

- **Suitable off-shoring business activity:**
  - **80% of work is applying a repeatable process**
  - **20% ad-hoc, creative effort**
- **Reverse (80% creative, 20% repeatable) not well suited for outsourcing or off-shoring**

The activities most suitable for off-shoring are repeatable, meaning a similar work pattern is followed for several jobs. Work that is ad-hoc or custom does not generally off-shore well. This is primarily an economic factor: since off-shoring requires making an investment in hiring and training, repetitive work maximizes that investment.

Process Oriented Work Flow

- **Work has specific inputs, tasks, outputs**
- **Better if entry, exit criteria known**
- **Documented, explainable, methodical**
- **Objective decisions govern task work**

Unquestionably the most important factor influencing successful off-shoring is codification: a work flow that follows a defined process with inputs, tasks, and outputs. If the process has known starting and finishing criteria, better still.

The Carnegie-Mellon Software Engineering Institute has established a series of models for assessing and improving work processes. A CMMI Level 3, Defined process meets this criteria. See the following web resources for more information:

http://sei.cmu.edu/cmmi/index.cfm

http://lbgeeks.com/gitc/pmProc.php

The following peer-reviewed journal paper describes codification as a critical success factor:

Journal of Information Technology Management, ISSN #1042-1319, Evaluation Criteria for Selecting Offshoring Candidates: An Analysis of Practices in German Businesses. Markus K. Westner, European Business School, Oestrich-Winkel; Susanne Strahringer, Dresden University of Technology, Dresden.

Automated Quality Control

- **Applies to all external work, both outsourcing and off-shoring**
- **Correctness of aggregation or assembly formally verified**
- **Automated inspection or test methods**

Any time a work flow incorporates an output that must meet a specific customer expectation, some quality management is necessary. Otherwise there is no assurance the work is performed to the needed level of quality.

Several methods exist to help control and manage quality. If these methods can be automated, for example with regression testing, then it is easier to check all output from the off-shored process.

For more information on quality management, see the following web page:

http://lbgeeks.com/gitc/pmQual.php

Internet Product Delivery

- **Armenia has low cost labor, but landlocked**
- **Manufacturing not ideal candidate, unless process adds high value (not commodity)**
- **ICT, software work avoids transport cost**

Armenia has an open border with only one neighbor (Georgia), so ground transportation is impractical and expensive. For low value products, these costs make return on investment from manufacturing difficult. For high value products, such as engineering prototypes, this economic factor is not so insurmountable.

Of course ICT work (especially development) that relies on the Internet delivery avoids transportation costs entirely. Although Internet access is an order of magnitude (ten times) more expensive then in the US, it is small when included in the total cost of establishing an off-shore office.

- **Software maintenance:**
  - Customer reports "crash" with specific data set
  - Data sent to off-shore facility with source code, build system, test system
  - Problem is reproduced
  - Fix applied to code base
  - Configuration control board approves change
  - All customers benefit from fix

These charts show some examples of work that meets all of the requirements necessary for successful off-shoring. This is the first of three examples.

- **Web site maintenance:**
  - **Customer moves, changes mailing address**
  - **Asks for web site update via on-line form**
  - **Update off-shore while customer closed**
  - **Fix performed, released in morning**
  - **Site updated within one business day**

This is the second of three examples of candidate processes for off-shoring.

- **Market research service:**
  - **Customer asks for report on competitor**
  - **Seller offers specific format for given price**
  - **Request submitted on-line**
  - **Off-shore facility performs Google® search, populates database tables**
  - **System generates report, emails customer**

This is the third and last example. Note that even though the example service uses ICT and the Internet as a method of product delivery, it is NOT a technology oriented service.

Cost Models

- **5:1 or better cost advantage**
- **Software engineer example:**
  - **Five-seven years of experience plus BS or MS**
  - **Knowledge of multiple languages, tools**
  - **Specific industry or organizational experience**
  - **Proven track record**
- **Armenia:**
  - **20K USD/year for top performers**
  - **40-60% total overhead**
- **USA:**
  - **80-100K USD/year metropolitan area median**
  - **100-150% total overhead**

The economic benefit of off-shoring in Armenia is a 5:1 or better cost advantage at the high-end for technology workers in positions requiring specialized education and experience.

There are multiple reasons for this leverage. The first is direct salary costs, which of course are lower in Armenia. But total overhead is also lower: the cost of office space, cleaning services, payroll taxes, and fringe benefits are about half of that in the US.

Summary

- **Successful off-shoring requires commitment**
- **Work must be well structured, separable**
- **Armenia has high tech, low cost labor**
- **High value maintenance services ideal**
- **Perform process-oriented work off-shore**
- **Free host staff to concentrate on creative, intangible, sales issues**

Many things are necessary for off-shoring projects to be successful. Most important is the dedication of the host businesses to itself, its customers, and its employees. Without the drive to do so, off-sourcing will not be successful.

Not all work can be off-shored, but only work that can be codified and separated. And not all work that can be off-shored can be done profitably. Yet there are several types of work that can be successfully off-shored beyond the three examples we presented earlier.

Armenia has a labor force that is more optimized towards high-end, high-tech work. It is economically more efficient to do work not requiring as much education or experience in other countries. But especially in the INDRA region, Armenia has among the lowest cost for professional work.

A successful organization will use a combination of in-sourcing, out-sourcing, and off-shoring and match the work performed to the most efficient method. Off-shoring to Armenia can free host staff to concentrate on the ad-hoc, creative, intangible, and sales-oriented work, making use of this staff more efficient as well.