



# Worldwide Offshore Software Capabilities

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Gartner estimates that by 2005 thirty percent of Global 2000 companies will have a sourcing strategy that include near shore and offshore solutions. Software outsourcing estimate growth from various countries varies and change as the downturn continues. India's 50% growth estimates have been pruned down to below 35% for the year 2001. But even in these unusual times such a growth rate is encouraging.

Software outsourcing took off in the nineties; India itself saw a revenue rise from under \$150 Million to over \$6 Billion in just seven years. Arbitrage or cost avoidance has been a major reason for outsourcing, the ability to ramp up skilled resources in a relatively short time has been another.

India's lead in the software development is looked upon with envy and other countries are now building their infrastructure to emulate this success.

Factors that favor competitive and comparative advantages to service provider countries are:

- A well developed IT infrastructure
- Labor costs
- Communications Infrastructure
- Advanced technical education facilities
- Government "sponsorship" and promotion
- A Software lobby
- A Diaspora of immigrants from that country working with the outsourcing companies

Worldwide offshore development capabilities can be differentiated by value and by capability. They can be positioned into 3 categories:

- Major League
- Challengers
- Minor League

<b>MAJOR LEAGUE</b>	<b>CHALLENGERS</b>	<b>MINOR LEAGUE</b>
India	Russia Philippines Ireland Israel	Romania, Canada, Hungary, Mexico, Czech Republic, Poland, Singapore, Australia, Bangladesh, Pakistan, China, Sri Lanka, Egypt, Caribbean, Dubai, Latin America

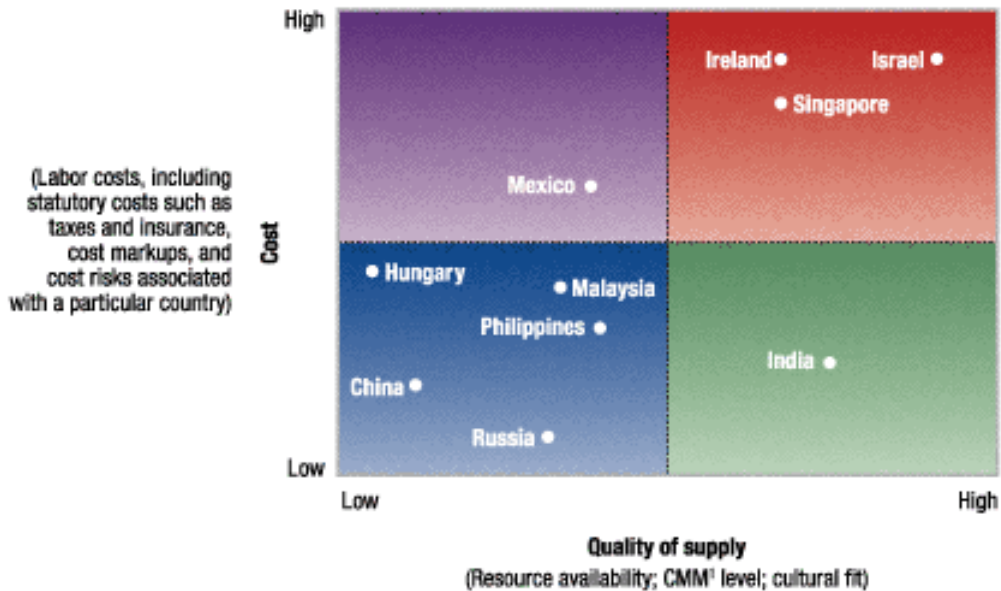
### **Where do you go for Offshore Outsourcing?**

While India certainly takes the lead other countries offer certain advantages. Each country brings its advantages. India has the most mature capability in software development – of the 38 companies that have attained CMM Level 5 certification 27 are in India.

McKinsey looked at various countries and created a Cost vs. / Quality of Supply matrix:

EXHIBIT

Where to turn



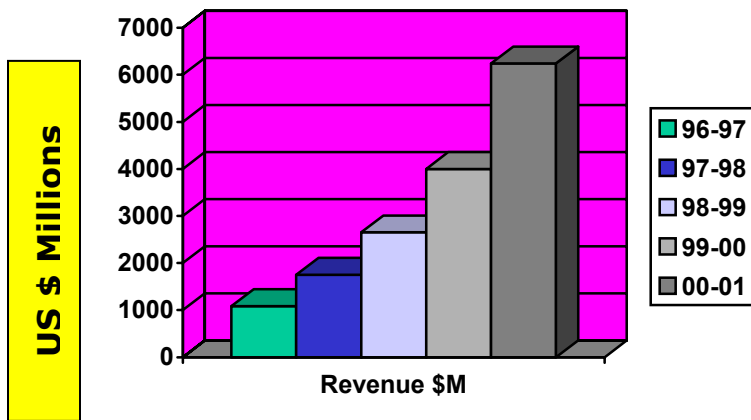
<sup>1</sup>The capability maturity model (CMM) is a metric developed by the Software Engineering Institute to specify the level of process maturity associated with a software organization.

Source: The McKinsey Quarterly, 2001 Number 2

### The Indian Software Industry

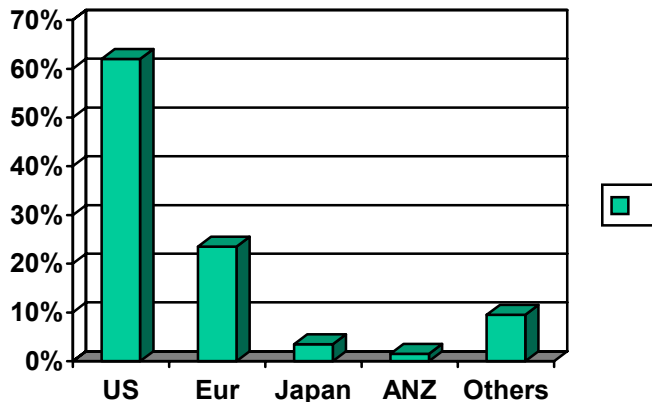
India leads the rest of the world by leaps and bounds. A survey by Nasscom India found that 40% of the Fortune 500 companies outsource some of their software development to Indian companies. The Indian Software Industry was small in the early nineties. Indian companies took a fairly interesting route to Offshore Outsourcing. The Indian Diaspora visible in most companies in the US was supplemented by in sourced programmers from India in the eighties and the early nineties. This was traditional "body shopping" but it gave an indication of the quality of skills India was producing. Over 50% of the H1B visa programmers come to the US from India. This is followed by China

(less than 15%). Since then, the front runner companies began to establish remote programming centers and took business from existing customers overseas. India has seen resurgent growth in Software Outsourcing from Indian based operations:



Growth of Outsourcing Revenues from India  
Source – NASSCOM

A majority of this business comes from the US:



### Software Outsourcing to India by Region

Trends indicate that the Outsourcing from Japan and Europe to India has also accelerated.

India has been particularly attractive as the business environment for Software development is extremely “business friendly”. The

Government of India is solidly behind promoting Offshore Software programming- so much so- that during a recent visit to the US the Indian Prime Minister was introduced to business leaders at a reception at the White House and he never lost an occasion to enquire from business leaders in the US whether they had considered opening software development centers in India. The Industry is ably assisted by Nasscom a body representing Software development companies in India. Nasscom is an enabler and an active Marketing forum to enable offshore software development in India. Nasscom works closely with the Government of India to ensure that proactive laws are put into place to create and maintain a Business friendly environment.

There are liberalized policies for transacting business in India. Companies can have 100% ownership of its Indian operations and the Government provides for a tax exemption on profits on Software exports from India for up to 5 years. The Government has setup modern Software Technology Parks in metropolitan areas such as Hyderabad, Bangalore, Bombay, Chennai and New Delhi. Companies can designate their facilities as Software Technology Park and enjoy duty free import of hardware and software as well as avail of all benefits to a STP company. The telecom Infrastructure was a little slower however it is easy to setup dedicated 64Kbps satellite links. The country is also setting up a high speed fiber grid and will be in a position to provide extremely high speed data capacity.

In terms of Software development most other countries at a stage India was 10 years back. India has solidified this lead by challenging the domestic Industry to excel and providing incentives to Companies that achieve SEI CMM Level certifications. The SEI Level 5 is the most difficult and coveted certification. Only 38 Companies worldwide have achieved this status- of these 27 are in India. A large number of Companies have also simultaneously achieved the ISO 9000 certification.

What keeps India ticking is the large number of Computer Science graduates it produces every year. Over 150,000 computer science graduates graduate every year from over 130 accredited graduate schools and universities. A larger number of students graduate from private training schools in programs that can run from 6 months to 4 years. This ensures a huge capacity that local companies can draw on as demand peaks. Most other countries lack such numbers and find it difficult to scale their Outsourcing business models.

The Indian IT industry is well established for Software programming of projects. It is now gearing itself to outsource Business Process. Therefore large centers are coming up for remote call centers and companies have started to look at other avenues of business process outsourcing (Accounting, etc).

## **Outsourcing to Russia**

What characterizes Russia as a possible challenger is not in the number of programmers it has but in the quality of programmers it has. Russia has about 7500 programmers that generate revenue of about \$60Million to \$100Million every year. Russian software development centers are concentrated in Moscow, St. Petersburg and Novosibirsk.

A number of large offshore development centers of US companies are also in operation. Intel has about 200 developers, Motorola has about 200 developers and Sun Microsystems has about 300 developers in Russia. The Lawrence Livermore maintains a lab in Russia in a joint venture.

Most Russian programmers have a formal science degree and have worked in very complex Russian defense programs building missiles, space vehicles, satellites, nuclear power plants and equipment, gas pipeline and closed loop control systems and instrumentation. Programming is a secondary skill acquired by these scientists. They are self taught in programming which is why they have a reputation of being "hackers". Russian programmers by virtue of this involvement have a "systems" view of the project.

On the flip side Offshore Outsourcing is a cottage industry in Russia with small companies of 20 to 30 people handling projects as they come their way. There is relative inexperience in managing large scale offshore development centers. As a consequence the management depth and processes remain shallow. Russia today is where India was 10 years ago. Russia does not have a single CMM SEI certified software operation. Language is another area of concern with Russian programmers. Russian scientists still have difficulty with the English language and communicating with the "brilliance" may well require a very experienced translator who has understanding of technology.

The Russian business environment is far from user friendly. The Government still maintains strict controls; travel can be cumbersome with restriction even with the opening of the Russian economy.

Communication costs to Russia are still high. The cost for high speed networks is falling but still is at a high level.

The biggest challenge will come through issues such as intellectual property rights and protection, export and import of dual use equipment, taxation, labor laws, company registration and reporting and the tight currency control. Subcontracting to a Russian company may help avoid some of the tax and compliance issues; however any company that looks at outsourcing invariably does so with an objective of setting up a wholly owned development center. And that is where things get extremely tricky in Russia. Labor laws have not changed from the Soviet era; therefore there are very strict laws that govern hiring and firing of employees with severe penalties.

Russia has well defined Intellectual property laws yet its enforcement is extremely tardy. Copyright laws are divided into property rights and non-property rights. Property rights govern the right to sell or copy the Software. Non property rights include the right of the author of the software to be "recognized" in the work product and the right to protect the integrity of the software. Thus the "author" of the software holds the right to any changes that could be made to the software to protect from his reputation being sullied. This is a grey area in Russian law. For software developed outside Russia the copyright law of the country where it was developed is recognized. However, to ensure enforcement it may be worth the effort (and this can be an effort) to get the copyrights registered in Russia. Copyrights transfer can be tricky as only property rights of the software are transferable; the author always retains his non property rights. Copyrights to software developed while employed belong to the employer.

If a company considers "acquiring" intellectual property to be re-used in the technology being created there it should very carefully look at all rights including contracts between employees and employers to understand issues related to non property rights.

Import of equipment particularly dual use equipment requires licenses from various Agencies in Russia. This contrasts with India where any item can be imported through a single window license mechanism into the Software Technology Park. The license is easy to obtain and

ensures that imported equipment attracts a zero percent customs duty.

## **Philippines Outsourcing Market**

The Philippines is well known for semiconductor foundries that were set up by companies such as Intel and Motorola. What is lesser known is that the Philippines have a successful track record with Call center outsourcing. Large call centers have been in existence for several years.

Philippines has an education system like the United States, English is one of the primary languages. The education system ensures a cultural fit with the US system. This explains why it has been so easy to set-up Call centers in the Philippines.

The country has – seeing the Indian success- begun to explore and promote itself as an ideal Software development center. However, it lacks the size and scale of the Software Industry. Pilipino companies also have not gone in for major certifications such as SEI CMM. The country has a capacity of about 30,000 software programmers and produces roughly 10,000 new graduates every year. A large number of these graduates look for employment in ASEAN countries such as Singapore, some do come to the US via the H1B Visa route. The total outsourcing revenues from Philippines is estimated to be under \$350Million.

## **North Ireland and the Republic of Ireland**

The Irish Software Industry has revenues of over \$6 Billion every year. However not all of this represents Software Outsourcing. The Irish Government has set up huge incentives to Software companies to produce Software in Ireland. Most companies use this to their advantage and have set up “Software production” for distribution in Europe. A large percentage of the \$6Billion is license revenues on Software sales.

The Irish Software industry though is very mature and programmers are extremely skilled in latest technologies. There is low turnover so the quality of programmers is extremely good. A major source of revenue is on Internationalization and localization of Software programs.

The biggest problem with Ireland is the number of Software programmers it produces every year. That number is extremely low despite Government initiatives to increase this. Companies are looking to acquire companies overseas to enhance their billable capacity. The two Ireland's graduate roughly 5000 software programmers every year. This is not sufficient to build any credible Software Outsourcing Industry.

The other problem with Ireland is labor cost. A programmer costs roughly \$25,000 to \$40,000 per year compared to \$6000 to \$20,000 per year in India.

### **ISRAEL OUTSOURCING MARKET:**

Israel has been ranked as a country that has an extremely skilled programming workforce. Software export sales are under \$1 Billion. Israel however, is also home to product software development and some of this license revenue contributes to that number.

Israel has a workforce of about 30,000 software programmers. It is also a center where high quality product software and embedded software is produced. Custom application development is a smaller percentage of this revenue.

Israel with India enjoys the patronage of large multinationals such as IBM, Microsoft, Motorola, Compaq, HP and Intel.

Israel will maintain its status as a developer of licensed intellectual property and a large portion of the workforce will be employed in this development. It will have a limited ability to match India's capability of building a large Software infrastructure.

**China** is another country feared by India as one that has a potential of challenging India's lead in the Software development marketplace. China has the numbers and the low cost structure that India enjoys. What China lacks though is a rigid enforcement of Intellectual property rights and also suffers from the language barrier. Japan continues to use China as a staging for a big portion of its Software development, even as it has moved to engage India.

In comparison to the Big league and the challengers other countries maintain boutique operations by comparison. The East European companies can be an effective staging ground for "near shore

development” for the European community. Mexico, Canada and the Caribbean can similarly meet some near shore Software development.

Each company makes its choice for where it wants to go for remote outsourcing, factors to consider should always be:

- A well developed IT infrastructure
- Labor costs
- Communications Infrastructure
- Advanced technical education facilities
- Government “sponsorship” and promotion and a healthy business friendly regime
- Availability of skilled labor in large numbers
- Friendly laws for protecting property rights
- Mature processes for Outsourcing

Software Outsourcing is an important commitment, making it work can be challenge. It may be worth your while to look at countries and companies that have met this challenge and set up processes to manage the relationship and the work.



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