

Offshoring Evolution: Global Innovation, Local Markets

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If the Roman empire could figure this out 2000 years ago, we can as well...



Based on a 2008 article by Peter Jones and Lionel Casson in the Spectator

Note: Source: Based on a 2008 article by Peter Jones and Lionel Casson in the Spectator; "Globalization Is Great!" by Tom G. Palmer, Sentor Fellow, Cato Institute; Zinnov Analysis

The current wave of globalization started in the 1980s and rapidly evolved over the last 10 years



The Rapid Growth of the MNC R&D Centers in India, China & Central/ Eastern Europe (CEE)

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The presence of global 100 R&D spenders significantly increased between 2002 and 2007. Currently 90% of these companies have R&D centers in emerging countries



India/ China R&D Center Evolution Pattern of Top 100 R&D Spenders

Source: European Union Industrial R&D Score Card; NASSCOM; Zinnov India R&D Database; Zinnov Analysis

Most global centers are predominantly setup for cost savings and access to relevant talent

R&D Globalization Driver Priority as Perceived by US Stakeholders (Percentage of Respondents)



Source: Data aggregated based on Zinnov Survey of 100+ US R&D Stakeholders in Nov 2009; Zinnov Analysis Zinnov, VPE/CTO Community of Practice Confidential

Companies have leveraged global locations to carry out work across the R&D value chain.



R&D Activity Split by Location

Note: CEE includes Russia Source: Software Top 100: Zinnov R&D Database: Zinnov Analysis

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The macroeconomic changes due to the global meltdown has opened new windows of opportunity in emerging geographies



Note: Source: NASSCOM; Company Annual Reports; Zinnov analysis of RFI responses and interviews with key stateholders, VPE/CTO Community of Practice Confidential 11

MNC R&D Centers are looking to scale the maturity curve and innovate from global centers , while consistently maintaining the cost advantage



Many large and SMB companies are exploring / leveraging their vendor partners to outsource sunset products and to co-invest into new products



Note: Information aggregated from company press releases and new articles

Source: Interviews with key executives (of software product companies) in the US, India, China, Ukraine'and Russia; Qualitative insights from company annual reports; Zinnov Analysis ¹³

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Our recent preliminary research shows that software companies are not yet leveraging the full potential of globalization



Note: Western European countries and Canada; **India, China, South East Asia, Central and Eastern European Countries (Ukraine, Poland, Bulgaria etc.), Russia and others Zinnov, VPE/CTO Community of Practice Confidential Source: Interviews with key executives (of software product companies) in the US, India, China, Ukraine and Russia; Qualitative insights from company annual reports; Zinnov Analysis

Realizing the emerging markets opportunity, companies continue to invest their R&D dollars in emerging geographies such as India and China...



- Product management is relatively easier in emerging geographies for mature products as the companies already have clients in these locations
- Most of the web platform based companies are increasingly looking towards the opportunity in the emerging markets
- At times, companies also focus on emerging geographies for very specific skill sets that are critical for a product roll-out

Discussions

- Since the current major markets for most of the companies is concentrated in the US, hence most of the product development (i.e. high end of the PD value chain) is kept at the US R&D centers
- However, majority of the companies are increasing R&D spend in emerging geographies such as India and China as they believe that emerging geographies are a good ground for work associated with the low end of the value chain
- Companies believe that unless the customer is in emerging geographies, they are not willing to set up product management in these locations. Companies also believed that it is difficult to work with distributed teams across geographies for new products, however, this works well for mature products

Though there has been periodic increases in salaries, cost savings are still significant in the emerging countries



Average Operating Cost/FTE/Year - A Comparison

Note: Source: Primary interviews with stakeholders of service providers; Zinnov analysis; Zinnov Analysis

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A very few large centers have been set up in India; most of the centers have employee headcount less than 500



As companies mature their operations and increase the size their cost of operations (per FTE) is continuing to come down. This is predominantly due to addition of junior resources



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The availability and the maturity of talent has also helped companies in moving up the value chain for their global R&D Centers



R&D Talent Pool in Various Countries in Thousands, 2009

Source: Zinnov India/ China R&D Database; Primary Interviews with Key Stakeholders; World Intellectual Property Organization; US Patents and Trade Officer Zinnov Analysis Confidential 20

Bangalore and Shanghai has the largest R&D talent in the emerging geographies



Note : Size of bubble indicates availability of talent , Only low cost countries are considered for benchmarking **PE/CTO Community of Practice Confidential** 21 Source: Zinnov, Country analysis reports, Zinnov clients' portfolio analysis reports

The rapid growth of R&D centers have increased the R&D talent pool in India. It is expected to grow at 10% YoY



Vertical Wise Distribution of MNC R&D Talent in India, 2010

Source: Zinnov Annual R&D Talent Pool Study 2009; Top 1000 R&D Spender Analysis; Industry Reports; NASSCOM Strategic Review 2010; Zinnov Research and Analysis Zinnoy, VPE/CTO Community of Practice Confidential 2

In total, there are about 130,000 personnel engaged in R&D activities across MNC subsidiary centers in China



Note: This includes talent pool only for the R&D centers in these locations; Talent pool analysis has been dose for 7 major Bestient locations and other uncoming practices Confidential 23 Source: Company websites; Company Press Releases; Zinnov Analysis, Primary Interviews with stakeholders in MNC subsidiaries and software Parks

Attrition has picked up due to employee movement between companies than new job generation



Source: Zinnov analysis of R&D landscapes in India & China

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Although Sustenance/support and QA form a major chunk of R&D work from Indian centers, Development and Concept have grown in recent past



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Some of the key challenges R&D centres were struggling have been replaced by new sets of challenges





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Companies are now focusing on key enablers to improve the innovation capability of their centers



Note:

Note: Zinnov, VPE/CTO Community of Practice Confidential Source: Data aggregated based on the analysis of more than 200 product teams across multiple MNC R&D centers in India; Zinnov Analysis

Companies are making conscious effort to drive engineering and product leadership from India



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Organizations that moved to higher level of maturity have similar characteristics in their approach



Many companies have leveraged the flourishing ecosystem to move up the value chain

Enablers		Peer Company Best Practices
Focused Ecosystem Linkage	University Partnerships	 IBM and Intel have established deep research relationships with top engineering schools to leverage the research and innovation capabilities at these universities. Yahoo has started developing partnerships with Tier 2 engineering colleges. It recently signed a MOU with Thiagarajar engineering college on cloud computing
	Branding	 Microsoft has created a great brand among domestic technical talent by consistently featuring in Hewitt's Best companies to work for List, Data Quest Top 20 and ET Smart Workplace Yahoo organized a Open Hack Day in Bangalore where technology enthusiasts were exposed to latest yahoo products and concepts
	Local Alliances	 Cisco governs all India partner relationships from India. It has helped them better leverage the India partner ecosystem. Intel is in discussions with the Government controlled ITI to form a JV for WiMax rollout in India.
	Government Relations	 Intel, Microsoft and Cisco work with the Indian government on several information technology and educational initiatives. Microsoft India hosted a Government Leadership Summit to provide a platform for India's policy makers to discuss the challenges and opportunities of driving innovation-led growth Cisco, Microsoft, Intel and Yahoo have expressed keen interest in assisting with the Indian Government with the UID initiative.

Experience levels at MNC centers will continue to increase



Organizational Pyramid by Experience Level (Sample = 30 MNC R&D Centers)

India and China continues to produce a significant number of fresh engineers who are available to work for the MNC R&D centers



Higher cost pressures mandated companies to recalibrate the salaries across levels with only critical positions witnessing upward swing



Note: The %age above is calculated based on the average of the median value for each position for the two years Source: Zinnov, VPE/CTO Community of Practice Confidential **Continuous Focus on Operational Efficiency**

Unlike the market perception, salary increments are also controlled in spite of the recent increase in market demand



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Focus on building technical leadership and product management is increasingly being realized (1/2)

Enablers		Key Best Practices
Technical Leadership	Product Architect	 IBM has a senior research fellow at their Bangalore center who integrates product engineering efforts across various business units in India and also act as a mentor/role model to engineers who prefer the technical career path Texas Instruments has a number of Senior Technical and product architects who lead the complete engineering of a number of products for new markets. Tl's Locosto™ single chip solution enabling ultra low cost mobile phones is a prime example. Intel India has sizeable technical leadership that has successfully engineered products such as the new Intel High End Xeon server processor Yahoo India manages complete engineering of Yahoo Finance, Yahoo Autos, Yahoo Real Estate and Yahoo Weather
	Solution Architect	 IBM has increased the focus on services innovation at their India research labs. They recently appointed Guruduth Banavar as the director of the research labs. Guruduth comes with extensive experience in services science and innovation Cisco India employs a number of solution architects working in communication software space Oracle and HP have a number of solution architects working in Retail and BFSI space

Focus on building technical leadership and product management is increasingly being realized (2/2)

Enablers		Key Best Practices
Business Leadership	Product Management	 Google created a VP of Product management position in India early on to allow Google to generate new global products inspired by the Indian customer needs and pain points. Google has the highest ratio of product managers to engineers across all India R&D centers. Google has a number of Product managers focused on managing customers and business in strategic emerging markets. Yahoo has a VP of product Management based in India. Yahoo India has launched many products for the India market which are managed by Product Managers based in Yahoo India.
	Customer Engagement	 Oracle runs beta programs for their products and services for global centers from India. Customers often visit the Oracle office for product demos and provide detailed feedback. This has helped Oracle innovate on both products and services Yahoo launched Glue pages in the global markets from India. Yahoo India is currently testing SpotM, a social networking application and will be rolled out across geographies Cisco launched the Telepresence solution for Global markets from its India Centre

Portfolio Rationalization

Due to the decreasing margins of existing products companies are now investing more in New products



Average Percentage Split of R&D Investments Based on The type of Products

revenue is slated to come from New Innovative Products, which reflects in the increased spending on New Products. > The spend on Mature

 \succ The new wave of

- products has come down significantly
- This may lead more work from lower end of the PDLC to be offshored.
- Localization and Support of existing products may open up untapped local markets

Leverage Vendor Partners

The service providers play an important role in the maturing R&D ecosystem in emerging locations



During the recession we have seen the emergence of new engagement models and a higher propensity to leverage the same amongst customers



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While companies have been setting up their operations in emerging locations, the market in these locations has seen rapid growth (1/2)



Source: Euro monitor International; Zinnov Syndicated Study on SMB Landscape in India; NASSCOM Strategic Review FY 2009/TU: Forbes.com. Flich: Amovy Practice Confidential 43

While companies have been setting up their operations in emerging locations, the market in these locations has seen rapid growth (2/2)



Source: Telecom Regulatory Authority of India (TRAI); Zinnov Syndicated Study on SMB Landscape in India; NASSCOM Strategic Review FY 2009/10; Forbes.com; FICCI; Zinnov Analysis

Indian Companies have started innovating products for both Global and Domestic Markets



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8KMiles- Cloud Based Project Management





• Revenue model is on cloud infrastructure services provided, transaction fees from free lancers, listing fees etc

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Source: Company Websites, Interviews with Stakeholders, Zinnov Analysis

Note:

Global market presents significant opportunity across multiple areas, low cost business models and targeted customer acquisition approach are the key



Local companies in emerging locations are leveraging the innovation ecosystem to compete in both global and local markets



Companies are focusing on opportunities in domestic, emerging as well as developed markets



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Companies have now started to slowly increase their R&D investments after stabilizing in 2008 due to the financial meltdown



Companies have started to realize the importance of emerging markets and significant investments are now being projected in these countries (1/2)

Average Percentage Split of R&D Investments Based on Geography



With companies looking to bring in New Products, R&D investments in Development and Designing have rose in 2009(1/2)



Due to the decreasing margins of existing products companies are now investing more in New to Company and Product Line Extension type of products (1/2)



Average Percentage Split of R&D Investments Based on The type of Products

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Localization and Support

of existing products may

open up untapped local

India and China continue to be the most cost-effective geographies while the costs have increased across all geographies



Note: The data represented in the above slide is subjected to future changes. Zinnov is awaiting for data from few other companies Source: Data given by 18 R&D Companies. Secondary and Primary Research, Zinnov Zinnov, VPE/CTO Community of Practice Confidential 55

Though US forms to the be the key market for generating revenue, the contribution from emerging markets is increased considerably and is expected to touch 11% by 2011



Note: The data represented in the above slide is subjected to future changes. Zinnov is awaiting for data from few other companies Source: Data given by 18 R&D Companies. Secondary and Primary Research, Zinnov Zinnov, VPE/CTO Community of Practice Confidential

About 41% of the total employee base of the peer group companies is attributed towards R&D activities and comprises of a good geographic mix



Source: Secondary and Primary Research, Zinnov Analysis

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India Center for most companies is primarily engaged in the middle and low end tasks of the PDLC value chain like Development, Quality Engineering and Support



While cost continues to be a key parameter, companies are increasingly looking at the future potential of global centers for expansion of R&D operations



Limited team experience and difficulty in measuring value are the key challenges in emerging markets



Source: Secondary and Primary Research, Zinnov Analysis

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Future Outlook for Globalization

- Product and Business Model Innovation will force companies to look at global locations
- Business Continuity measures will push companies to look at Latin America
- 20 30% of innovation in companies will come from remote teams
- Emerging markets would contribute to 30% of the product companies' revenue
- 20% 40% of the management will be based in global location
- R&D costs will reduce significantly (20-40%) due to global operations
- 85% of all technology companies (>100 mil) will have significant global operations

Thank You Lyauk Aon



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Captive center and vendor partnerships can play a key role in creating the top line impact for the organization

Emerging Markets	 R&D centers are taking a leadership role in defining and developing products that are relevant for the emerging markets Reverse innovation - Products launched for the local market and taken to the global market
Cost Effective	 Creating global centers of excellence (e.g. mobile, cloud, SaaS etc.). Run beta programs for global customers
innovation	 Leveraging large developer network for building new and next generation applications
	Companies are leveraging India's cost advantage by offshoring Premium tech
Value Added	support and other value added shared services
Shared Services	 Optimizing operating cost by using infrastructure managed services, applications management services etc.
Acquisition of	Global R&D centers are gaining competency and business ownership through acquisition of local start ups
startups	Startups can bring the domain knowledge and passion to the engineering teams
University Research	 Industry is increasingly partnering with Universities not just for Talent but also for Research and Innovation Sponsored research and open research (fundamental research) are gaining traction

Export of product and business model innovation from global centers will be prevalent across organizations



Open Innovation



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Alcatel Lucent recently promoted their India head to the President of Global Services Operations of the firm

Honeywell recently promoted their India R&D center head to run its global engineering and Integrated supply chain organizations

The head of one of the major storage captives in India manages the global services centers of the firm located in China, Egypt and Philippines from India

The services arm head of a top computer manufacturing firm in India manages all the other services centers of the company located in South East Asia and Eastern Europe from India

Asia Pacific HR leadership in many R&D companies is based out of their India centers

